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Make the Most of Your HCOA Membership

Six Club Members Win Big in Vegas!

Choosing from more than 800 inspiring entries, *HANDY* editors hand-picked six Top Tool Testers to participate in the 2010 National Hardware Show's *HANDY* Test Shop in Las Vegas, Nevada. These lucky DIYers received hands-on experience with the latest power tools, posted real-time product reviews right from the show floor and much more. Check out all of the action at www.Handy10.com.



Kenneth Fox
of Tacoma, Washington,
crafts fine furniture for friends
and family and donates several
pieces to his son's school
fundraiser each year.



Mike Turner of Tucson, Arizona, uses
his two welders and plasma cutter to
craft various metalworking projects. He
also has a talent for tile work.



Mark Schmitt of Mequon,
Wisconsin, is an avid remodeler.
He enjoys woodworking and pro-
jects that involve plumbing, elec-
trical and mechanical work.



Jeff Carter of San Diego, California,
enjoys woodworking and light remodel-
ing. He operates a part-time woodwork-
ing business out of his one-car garage.



Vern Grassel of Otsego,
Minnesota, started out as a cabi-
netmaker and then expanded his
skills to include various forms of
carpentry and fine woodworking.



Charles Pherson of Brighton,
Michigan, recently started a
small handyman business. He has
extensive plumbing, electrical and
woodworking experience.

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CLUB MEMBERS

GREAT GIVEAWAY February/March 2010 prizewinners

Bulldog 140 portable engine-driven
welder and Viking Tribal auto-
darkening helmet from Lincoln Electric:
Arnold Kelm, Spokane, WA



Check out this issue's Great Giveaway on p. 76.



Power MIG 180C welder and Viking
Tribal auto-darkening helmet from
Lincoln Electric:

Raymond Vanlanot, Indianapolis, IN

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TEN REASONS TO VISIT

Get valuable bonus material and boost your chances of winning prizes from the Handyman Club of America at

www.Handy10.com

1 Exclusive Project Plans

The hardest part about being a *HANDY* editor isn't building projects; it's trying to explain how to build those projects in just a few printed pages. But with the help of www.Handy10.com, the editors can offer you additional information not included in the magazine. Through June and July, for example, you'll find a shopping list, more than 10 how-to photos and seven detailed project illustrations to assist you in building the "Double-Duty Shed" (featured on p. 34) in your own backyard.



2 Fountain Feature Overflow

Discover additional construction details for building the three projects showcased in "Simple Water Fountains" (p. 48).

3 Archived E-News

Wish you hadn't deleted yesterday's *HANDY TOOLBOX*? Find it and all other previously published e-newsletters at www.Handy10.com.

4 Twice the Chances to Win

Receive a double entry when you register for this issue's Click & Win and DeWalt Great Giveaway.

5 Featured Video

Learn how to improve your outdoor space by incorporating a trickling water feature.

6 More from the National Hardware Show

Did you miss the live product reviews posted by fellow tool testers at this year's show? No worries — you can still read up on the action.

7 Voting for Favorite Member Projects

Check out this issue's *HANDYWORKS* department and have your say on who wins the Critics' Choice Award.

8 Deals & Discounts

Save on all things DIY with exclusive discounts and special offers from Handyman Club of America partners.

9 Tool Testing — and Free Tools!

Learn about the Handyman Club of America's product-testing program and fill out your profile form today.

10 Member Mentors

Share tips and stories with fellow *HANDY* readers and get answers to your home-improvement questions on the HCOA online forums.

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Build a side table to match our WORKSHOP Easy Chair project By Connie Bastyr



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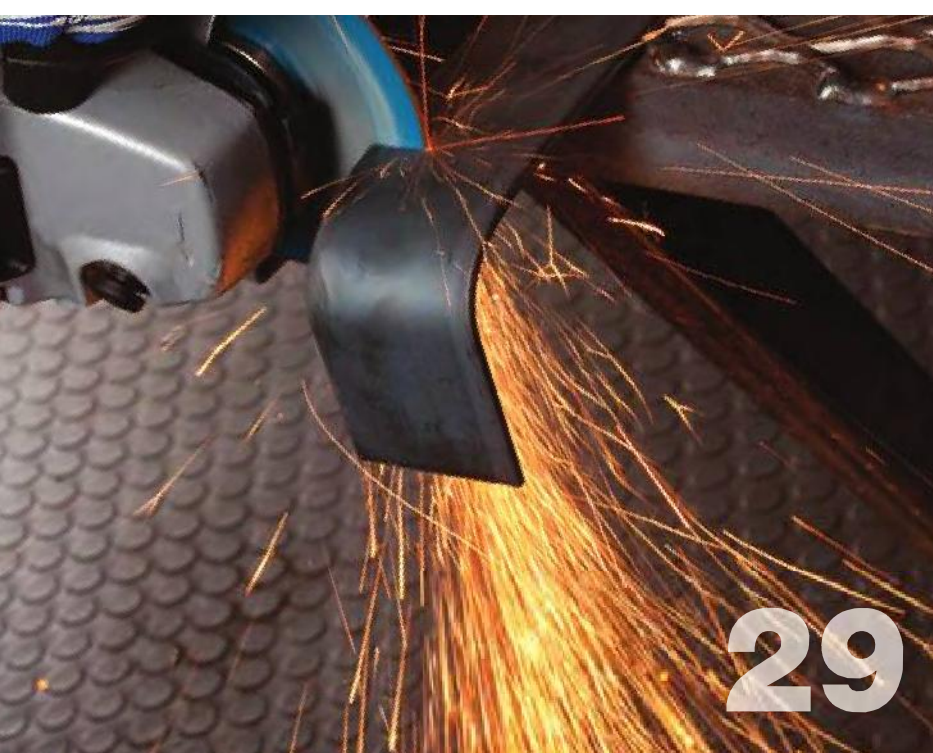
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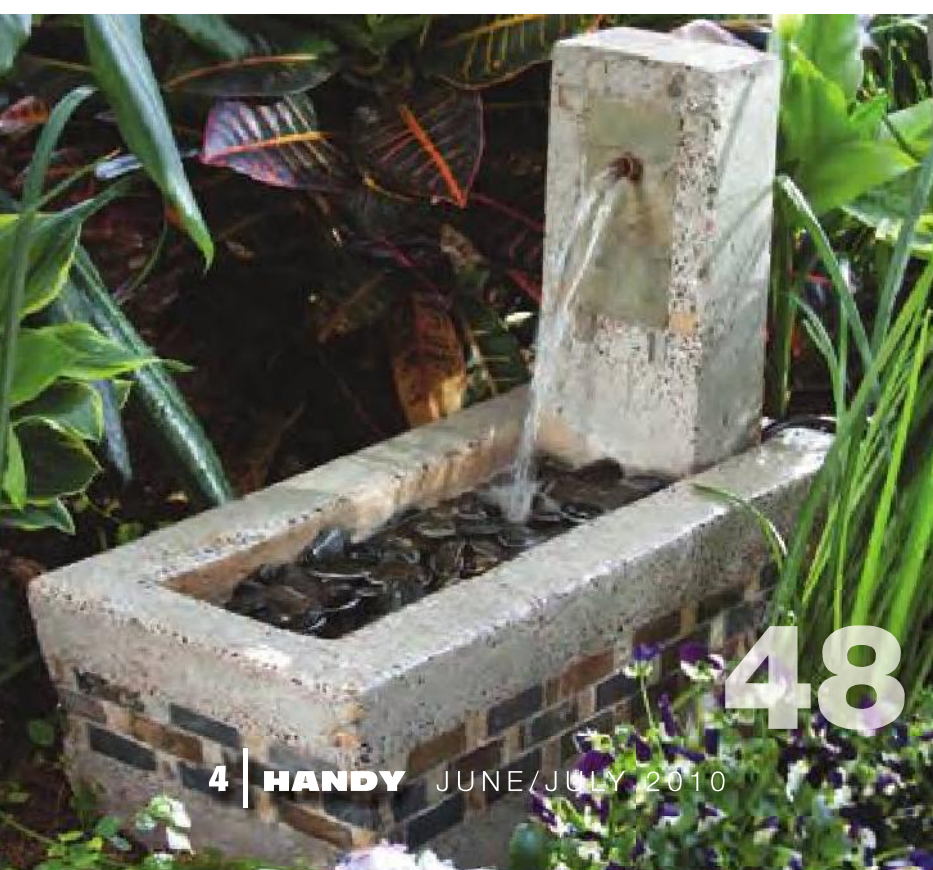
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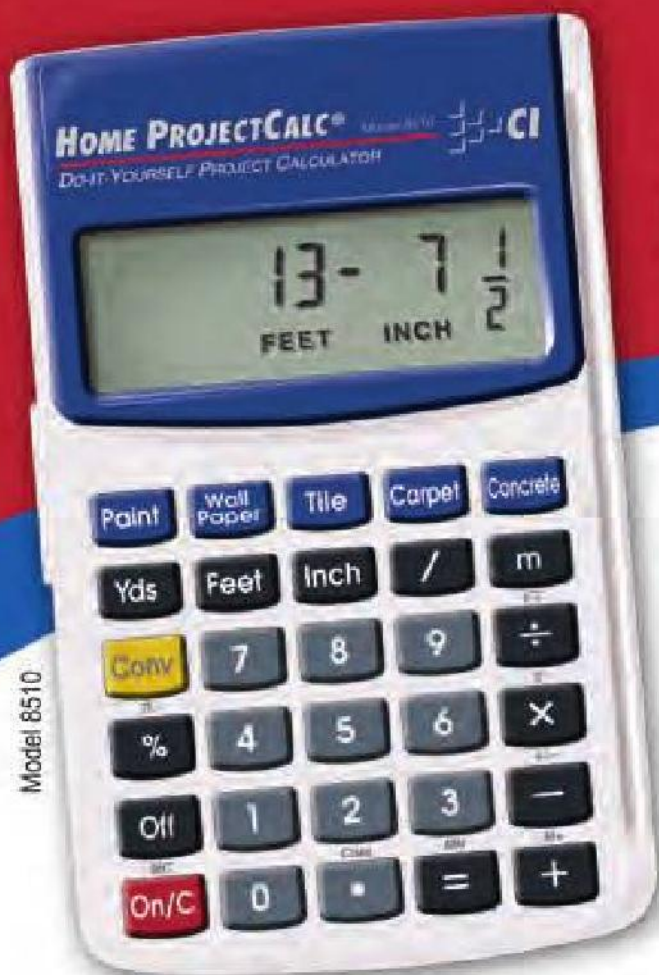


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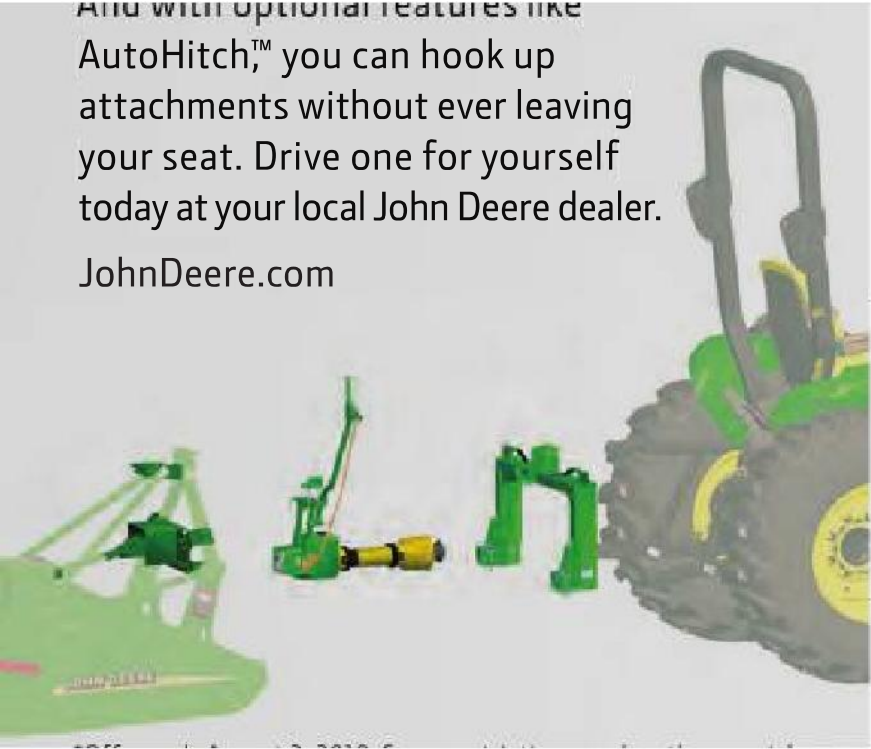


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Easy Chair

Create your own cabin-inspired seating that's simple to build and perfect for easy livin'

BY CONNIE BASTYR

Whether you build one chair or a whole set of them, this is a very relaxing project.



WEB EXTRAS

To find the plans for the table shown in this article, go to www.HandymanClub.com and click on WEB EXTRAS.

Once Club member Scott Wallraff completed the weekend-getaway cottage that he designed and built with his wife, Cathy, and their daughter, Mary, he knew it was time for a new project: replacing the metal folding chairs with comfy, complementary indoor seating. Besides matching the cabin's North Woods aesthetic, the new chairs needed to be attractive and sturdy yet swift to assemble and easy on the wallet. Scott did such a great job on all counts that we asked him to share his design with *HANDY* readers.

Using dimensional pine, Scott designed the chairs' simple parts to be assembled as four basic units for quick, modular construction. That efficiency, along with the casual look of an Adirondack/Morris chair hybrid, makes this a great addition to any getaway spot — whether it's a cabin, a deck or your backyard.

EASY CHAIR

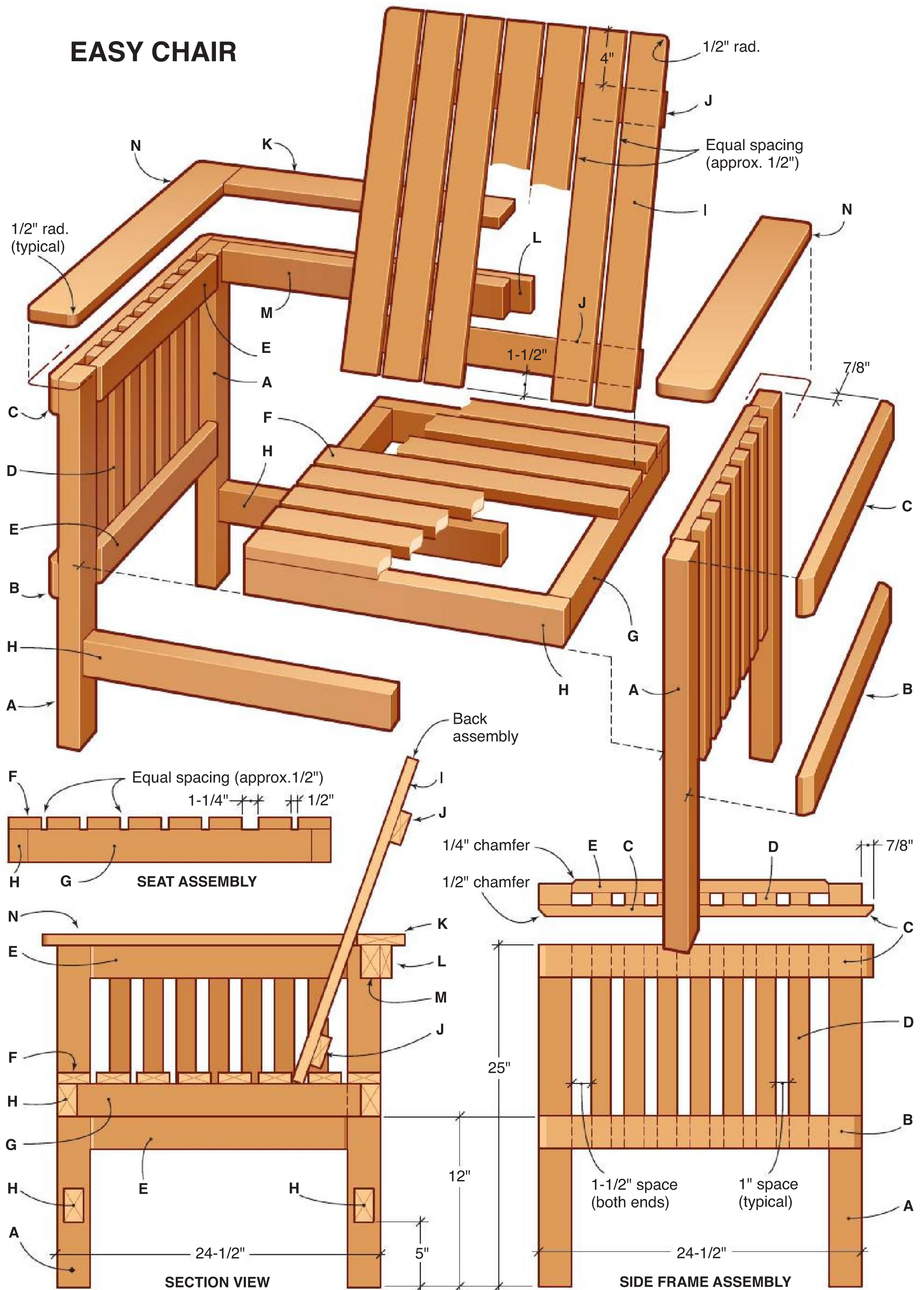


ILLUSTRATION BY GABRIEL GRAPHICS

To adapt the chair for outdoor use, we chose cedar and modified the measurements to fit the lumber's heftier (7/8-in.) thickness. Depending on where you plan to use your chair, you could make it from any type of wood; just be sure to check the exact dimensions of the material.

All parts are fastened with exterior-rated glue and deck screws. Be sure to bore pilot holes for all screws to prevent splitting. Add 1/4-in.-deep counterbores for the screws that will be exposed after assembly; you'll conceal the heads with shop-made cedar plugs later.

Assemble the sides

The two sides (which ultimately become the chair's frame) are made from parts A through E (see cutting list, below). Out of the 2x3 stock, cut the four legs (A) to length. If you're using 2x6 boards (see shopping list, below), rip them down to 2-1/2-in. wide and round over the cut edges.

Cut crosspieces B and C to length, and cut 1/2 x 1/2-in. bevels in the outside ends as shown in the illustration, opposite. These parts will form the outer surfaces of the sides. Build a frame of two legs, one bottom side crosspiece (B) and one top side crosspiece (C), using a framing square to ensure 90-degree joints (photo 1, top right). Note that the top crosspieces will extend 7/8 in. beyond the back leg.

MATERIALS AND CUTTING LIST			
KEY NO.	DESCRIPTION		SIZE
A	4	Legs (2x3)	1-1/2 x 2-1/2 x 25 in.
B	2	Bottom side crosspieces (1x3)	7/8 x 2-1/2 x 24-1/2 in.
C	2	Top side crosspieces (1x3)	7/8 x 2-1/2 x 25-3/8 in.
D	14	Side slats (1x2)	7/8 x 1-1/2 x 15-1/2 in.
E	4	Inner side crosspieces (1x3)	7/8 x 2-1/2 x 19-1/2 in.
F	8	Seat slats (1x3)	7/8 x 2-1/2 x 21 in.
G	2	Side seat supports (2x3)	1-1/2 x 2-1/2 x 21-1/2 in.
H	4	Horizontal supports (2x3)	1-1/2 x 2-1/2 x 21 in.
I	7	Back slats (1x3)	7/8 x 2-1/2 x 26 in.
J	2	Back rails (1x3)	7/8 x 2-1/2 x 20-1/2 in.
K	1	Backrest (1x4)	7/8 x 3-1/2 x 20-1/2 in.
L	1	Outer backrest support (1x3)	7/8 x 2-1/2 x 24 in.
M	1	Inner backrest support (2x3)	1-1/2 x 2-1/2 x 21 in.
N	2	Armrests (1x4)	7/8 x 3-1/2 x 27-1/2 in.

SHOPPING LIST	
1x2 x 8-ft. cedar boards (3)	
1x3 x 8-ft. cedar boards (7)	
1x4 x 8-ft. cedar board (1)	
2x3 x 8-ft. cedar boards (3)*	
1-1/4-in. exterior-rated screws	
2-1/2-in. exterior-rated screws	
Exterior-rated wood glue	
Exterior-rated finish	
19 x 17-in. seat cushion	
19 x 19-in. back cushion (see SOURCES ONLINE)	
*Alternatively, you can buy one 2x6 x 12-ft. board and rip it into 2-1/2-in.-wide parts; then round over the cut edges using a 1/8-in. roundover bit, a file or a sanding block.	



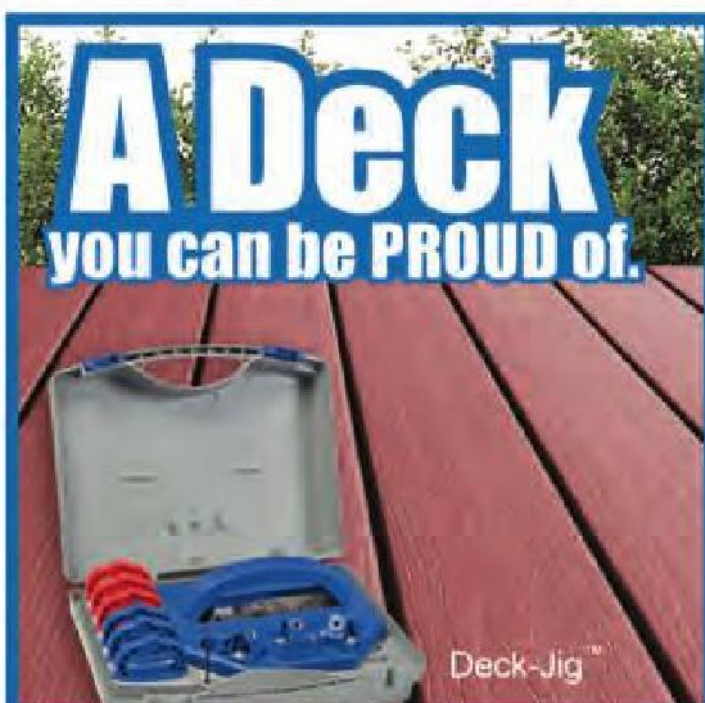
Attach a bottom side crosspiece (B) and then a top side crosspiece (C) to the legs, allowing a 7/8-in. overhang to extend beyond the back leg. The two side panels should be mirror images of each other — not identical. The inner side crosspieces (E) will be attached after the side slats.



For uniformity when attaching the side slats, use a 1-in. spacer between them as you bore the pilot holes and drive the screws. Tip: To save time changing bits on one drill, use two drill/drivers: one to bore and one to drive.



When attaching the seat slats to the side seat supports, use a 1/2-in.-thick spacer. Drill pilot holes and 1/4-in.-deep counterbores; then drive 1-1/4-in. screws.



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Next, cut the side slats (D) to length. Flip the side assembly over and attach the slats, starting at 1-1/2 in. from each leg and leaving a 1-in. gap between the slats (photo 2, p. 13). Counterbore these pilot holes just deep enough for the screwheads to be flush with the wood. (Plugs will not be necessary because these screws will be hidden.)

To complete the side assembly, attach the inner side crosspieces (E) between the legs, aligning them with the slat ends. Fasten with two 2-1/2-in. screws at the ends of each piece.

Assemble the seat and back

Two more panels (which are essentially squared-up frames covered with slats) make up the chair's seat and back. To construct the seat, clamp two side seat supports (G) between two horizontal supports (H) and adjust so they are square. Secure the joints using a 2-1/2-in. screws.



4
Align the seat edge flush with the front leg, resting the seat frame against the inner side crosspiece. Drive two screws through the frame into each leg.



5
Attach the second side, being sure that the outside surface of the chair is facing down. Note that the armrest support pieces extend toward the back of the chair.



6 After the backrest supports (L and M) are attached to the chair and to each other, toescrew into the insides of the back legs (using 2-1/2-in. screws) to enhance stability.



7 Clamp both armrests and the backrest in place before you start drilling pilot holes so you can be sure they are adjusted evenly. The fronts and backs of the armrests will have a slight overhang.

Install the seat slats (F), aligning the first and last ones with the seat front and back edges. Attach the slats with two 1-1/4-in. screws at each end. Add the other slats, leaving 1/2-in. gaps (photo 3, p. 13) between each pair except for the second and third slats — there you need a 1-1/8-in. gap for inserting the chair back. Round

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8



over the front and back edges of the chair seat to a 1/8-in. radius, and plug all of the seat's counterbores before assembling the chair.

To construct the chair back, cut the back slats (I) and back rails (J) to length. On two of the slats, cut a 1/2-in. radius in one corner; these will be the top corners of the chair back. Lay those slats 20-1/2 in. apart (outside to outside edges) on your work surface; then place the other five slats between them, spacing them evenly. Square up the assembly, and using glue and 1-1/4-in. screws, fasten the two back rails (J) in place, perpendicular to the slats. See the illustration for spacing above and below the rails.

Assemble the chair

Now you can connect the seat to the two sides. Lay one side on your work surface (outer side down) and attach the seat, making sure that the back of the seat is oriented toward the back leg (photo 4, p. 14). Next, lay the other side panel on the work surface with the inside facing up. Set the seat assembly on top, aligning front and back edges; drive two screws into each leg (photo 5). Insert a horizontal support (H) between the two front legs and one between the back legs. Secure each connection with two 2-1/2-in. screws.

To install the backrest supports, set the chair upright. Secure the outer backrest support (L) between the chair sides by driving two 2-1/2-in. screws

into each back leg (photo 6, p. 15). Clamp the inner backrest support (M) to part L and fasten them together with four 1-1/4-in. screws. (All of these screws will need plugs, but the toe-screw connection will not.)

Cut the armrests (N) and backrest (K). Add a 1/2-in. radius to the front corners of each armrest. Clamp the armrests to the sides, being sure to fit the backrest (K) piece between them (photo 7). Attach them to the chair, driving 1-1/4-in. screws into the tops of the side crosspieces (C and E) and the backrest supports (L and M) and into the tops of the legs.

There's no need to fasten the back panel to the chair; it's removable for easier transportation and storage. We made and installed wood plugs to cover screw holes (photo 8, above) and then added a clear finish, which brought out a warm, orange tone in the cedar, and a cushy cushion (see SOURCES ONLINE).

Once you complete a chair or two, sit down and enjoy your getaway — and start thinking about your next project. In case you want a table to go with your chairs, we've provided a Web Feature article with plans at www.HandymanClub.com. ♦

SOURCES ONLINE

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Don't let an old slab of

concrete stand between you and your dream patio or prevent you from adding a bathroom to your basement. Busting up a slab is hard work, but it's a job just about any DIYer can accomplish. And doing it yourself can save big bucks.

Demolition hammers are the tools of choice for busting up large areas of concrete. The biggest of these tools, called breaker hammers by manufacturers, are typically referred to as jackhammers. There are three common types of jackhammers you can rent: electric, gas and pneumatic. An electric jackhammer that plugs into a 120-volt power source is the type you'll rent for most DIY projects. These tools exert 40 to 60 pounds of force and typically cost about \$90 for a one-day rental (cost varies depending on rental-center rates; see SOURCES ONLINE to find a rental center). For smaller jobs or work that requires more precision, consider a smaller demolition hammer (\$75 a day; see "Chipping Hammers," opposite).

Contrary to its tough-guy image, a jackhammer is not tough to operate. The weight of the tool and its mechanical action do the work. Improvements in vibration dampening have made most models relatively easy to handle (see "Breaker Basics"). Transporting and lifting the tool into position is often the biggest challenge. Most rental centers provide a specially designed two-wheel cart that makes it much easier to roll the tool and bits to the job site.

You'll probably have to contend with embedded rebar and reinforcement wire inside the slab. For dealing with these hidden challenges, a few tools worth having on hand are large wire or cable cutters and an angle grinder with a cutting wheel or a reciprocating saw with a metal-cutting

PHOTOGRAPHY BY SCOTT JACOBSON AND PHIL LEISENHEIMER



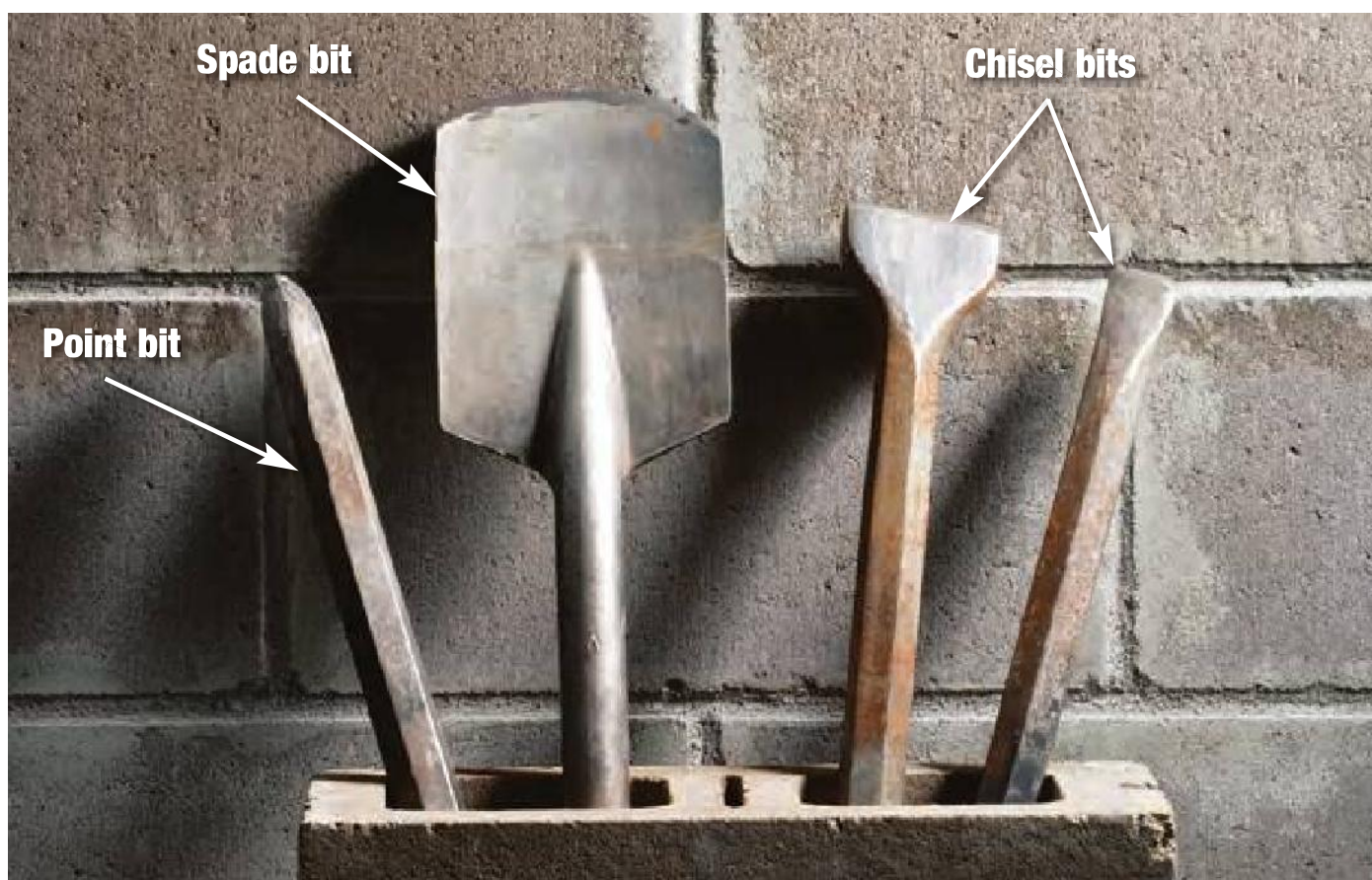
CHIPPING HAMMERS

Not every job requires a full-size jackhammer. Smaller demolition hammers, often called chipping hammers, are a better choice for work that requires more precision or when you need to use the hammer in a horizontal position, such as when removing floor tiles. Smaller demolition hammers exert 5 to 30 pounds of force, depending on the size of the tool, and they typically weigh less than half as much as a full-size tool.

BREAKER BASICS

A demolition hammer isn't a difficult tool to use. Here are the basic keys to success:

- Maintain a balanced stance.
- Keep the tool balanced in a vertical position.
- Don't lean on the tool; let its weight do the work.
- When removing an entire slab, start breaking with the bit positioned 6 to 12 in. from the edge of the slab.
- Make a series of holes about 6 to 8 in. apart until crack lines develop.
- Stop hammering and carefully tilt the demolition hammer and bit to pry chunks loose.
- When removing only a center area within a slab, start breaking in the middle of the area to be removed. Work toward the perimeter, and use a chisel bit to break along the perimeter line.
- Continue to create cracks and break up the slab until it is in pieces that are small enough to carry.



BITS FOR BREAKING

The jackhammer bit you select depends on the job. A point bit is designed to break the initial holes and get cracks started. Chisel bits break up large pieces and make more controlled breaks along a line. Wide chisels are most effective when used close to the slab edge. Wide chisels are also used to scrape material off of a surface and to loosen soil. Spade bits are specifically designed to break up compacted soil.

blade. A large pry bar is handy for shifting and loosening large pieces. And a wheelbarrow will save you trips when it's time to haul debris.

A day with a demolition hammer is no picnic, but it sure beats using a sledgehammer. Remember to let the tool do the work. Break the slab into small pieces you can lift. It's easier to make more trips hauling small pieces than it is to make fewer trips with bigger, heavier pieces.

Demolition is exhausting, but it's also one of the most satisfying phases of any project. The results of your effort might not be pretty, but they'll serve as a not-so-subtle reminder that you're well on your way to completing an exciting construction project. ♦

SOURCES ONLINE

For online information, go to www.HandymanClub.com and click on WEB EXTRAS.

American Rental Association
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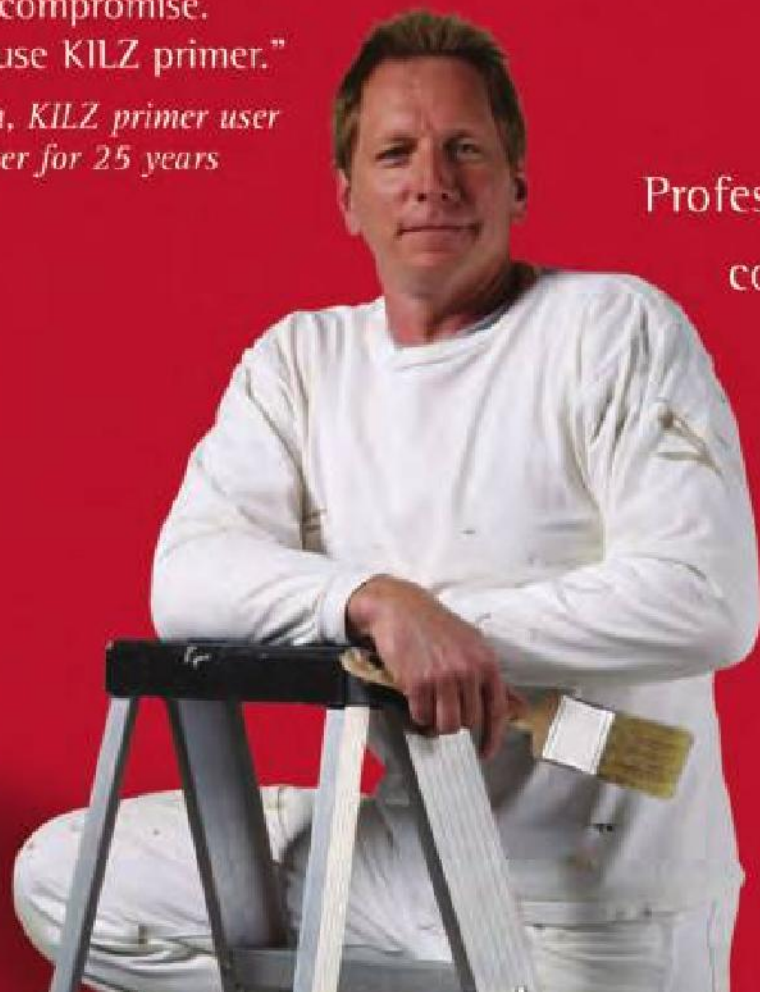
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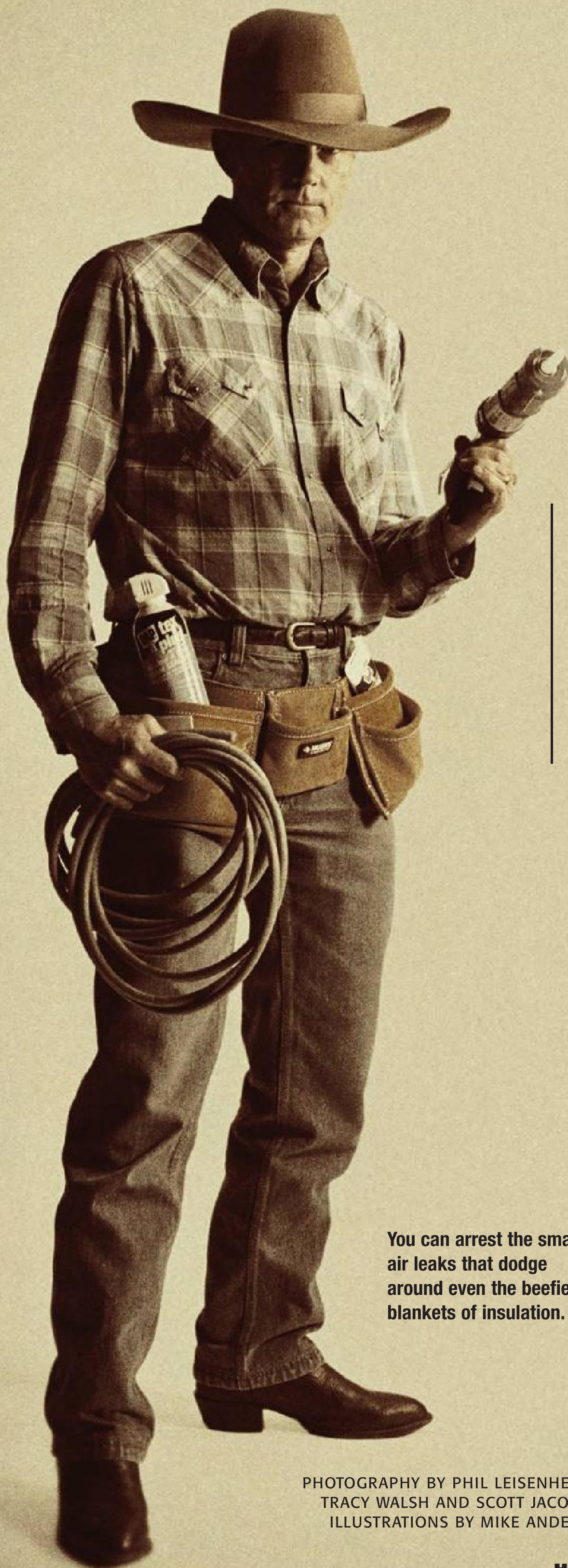
- Tim Wambach, KILZ primer user and pro painter for 25 years



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Weather Wranglers

Use caulk, foam and sealants to corral conditioned air — and your energy bills

BY CONNIE BASTYR

You can arrest the small air leaks that dodge around even the beefiest blankets of insulation.

Despite great advances

in science and technology, one of the few things humans still can't control is the weather. Even so, with the right tools, products and strategies, it is possible to rein in its effects on our homes, our comfort and our utility bills.

When properly implemented, modern construction methods and materials have made new homes much more weatherproof than their predecessors. Yet whether your house is new or more than a few years old, you can enhance its comfort and energy efficiency with simple and affordable steps.

Much has been said lately about obvious (and more expensive) energy-saving measures such as replacing windows, adding insulation or buying new heating-and-cooling equipment. We'll assume that those projects have been considered and implemented where possible. This article focuses on

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ILLUSTRATIONS BY MIKE ANDERSON



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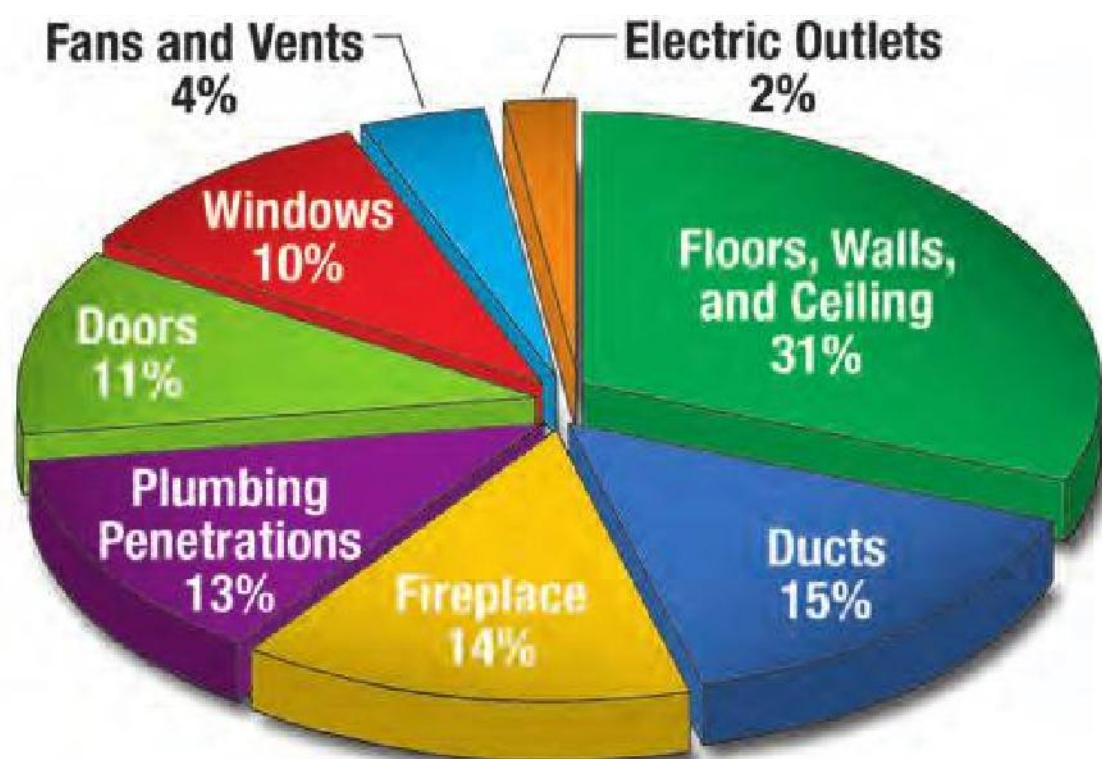


ILLUSTRATION COURTESY
U.S. DEPARTMENT OF ENERGY

During the cooling season, hot air seeps into a house; in winter, the heated air escapes through gaps, cracks and openings in various parts of the structure. Almost one-third of the breaches are found in floors, walls and ceilings.



The smoke from an incense stick is a visible indicator of air intrusion. Air movement is most apparent when the outside air is cold; during the summer, the test works best if you perform it on the windward side of the house on a breezy day.



Unlike insulation, which is used to block heat transfer, this posse of products helps to halt air leakage. For additional information about specific applications, visit www.HandymanClub.com and click on WEB EXTRAS.

minor measures that yield major results: specifically, rounding up air-infiltration problems and fencing in conditioned air. (For the lowdown on common culprits, see "Infiltration Information," p. 26.)

Problem places

You can save 5 percent to 30 percent of the energy you use in a year simply by reducing drafts in your home, accord-

ing to the U.S. Department of Energy. Besides lowering your energy bills, taking steps to block airflow can help to prevent moisture intrusion (and potential mold), pest invasion and even noise transmission.

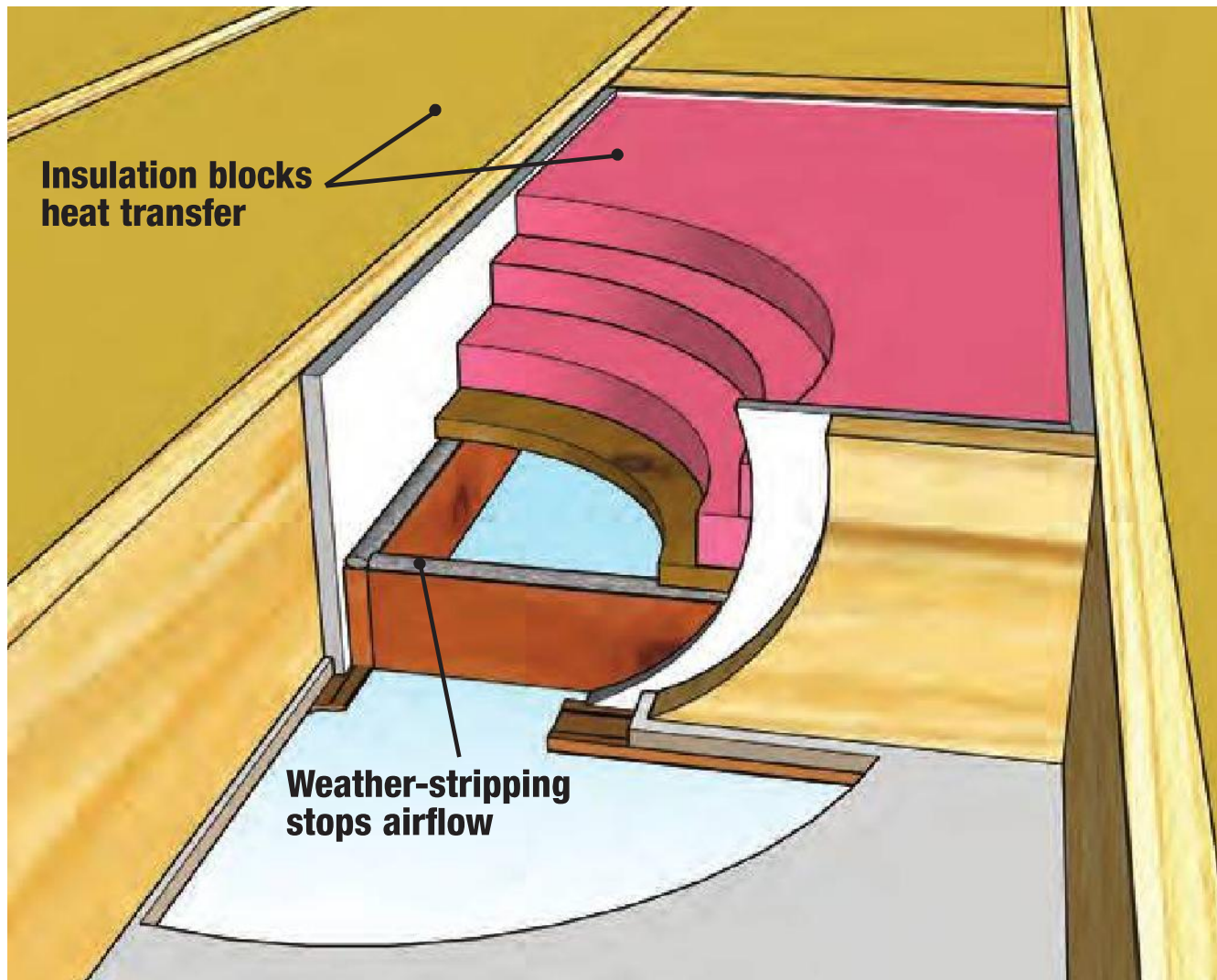
To identify your home's weak spots, start with a visual inspection of the exterior. Check for holes, cracks and gaps in the cladding and around trim and at utility connections. Look at the

condition of caulk along window and door frames and at corner joints as well as the places where siding meets the foundation.

From indoors, the breaches are less visible. Some leaks can be felt (in the form of a draft or chill). To detect others, perform this simple test: Close all windows and doors and turn off the furnace; then start the clothes dryer and the kitchen and bathroom vent fans. This creates negative pressure (or a vacuum), which draws air in through gaps in the building envelope. To spot the air intrusions, pass a lit incense stick along window and door frames, baseboards, electrical boxes, ceiling fixtures, plumbing outlets, the attic hatch and any other penetrations — blowing smoke indicates a draft.



Carefully pry the trim from around a window. If you find that insulation is not installed correctly between the framing and a window or doorjamb (a likely possibility), fill the space with low-expanding foam; then replace the trim.



Be sure the attic access panel has a fixed layer of insulation on top to block heat transfer. To stop air leaks, you also need to ensure that the edges are sealed around the attic opening by adding a gasket (and latches if possible).

Although visual inspection and the incense test can identify fairly obvious air-infiltration problems, your home may have additional hidden (yet significant) weaknesses. A professional energy auditor can perform a complete evaluation to help you maximize your home's energy efficiency (see WEB EXTRAS).

Products

Once you've found the voids in your building envelope, you must choose the right materials to fill them. Here's a primer on a few key products:

Caulk is intended for sealing cracks and joints where two planes meet or where different materials butt together. (If the gap is greater than 1/2 in., insert foam backer rod before applying caulk.) The most common caulks are latex, silicone and various blends incorporating the two. In general, latex is paintable (and should be coated when used on exteriors); silicone typically is not, but it's suitable for both interiors and exteriors. Silicone retains its softness and has greater elasticity.

Foam sealant fills larger voids and comes in polyurethane and latex formulas. One key distinction is that latex foam is lower-expanding and therefore better for use around window and door framing. Polyurethane foam is best to use in larger gaps and holes.

Window glazing seals the joints between glass and wood sash framing. A latex formula is more pliable as you work with it and can be primed and painted after the surface hardens. Oil-base glazing never hardens completely but can be painted right away.

Check manufacturers' recommendations for paintability, application restrictions, etc. Other products that can resolve air-intrusion problems are weather stripping, duct sealant (mastic) and metal tape.

Projects

Although a single magazine article can't provide comprehensive coverage of weatherization fixes and modifications, here we can offer a few practical ideas for stopping the flow of air into and out of



Apply caulk or low-expanding foam around the edges of electrical and cable boxes that are on your house's perimeter walls. Add foam gaskets before replacing the plate covers.



Gaps around pipes are inevitable — and often overlooked as energy wasters. Whether plumbing penetrations are under the sink, through the attic floor or coming from a crawl space, fill around them with expanding foam.



In places where you can access the ductwork, look at all joints and along the seams. If they're not sealed (or they're secured with duct tape) remove the tape and reseal these points with duct mastic or metallic tape.

your home. For additional tips, see "Energy-Saving Strategies" at www.HandymanClub.com and visit product Web sites or the U.S. Department of Energy (see SOURCES ONLINE).

Interior areas

- **Windows and door frames:** Remove interior trim to check for insulation between the window

and rough opening. Apply low-expanding foam if needed; then reinstall the trim. Caulk around the framing where it meets the wall.

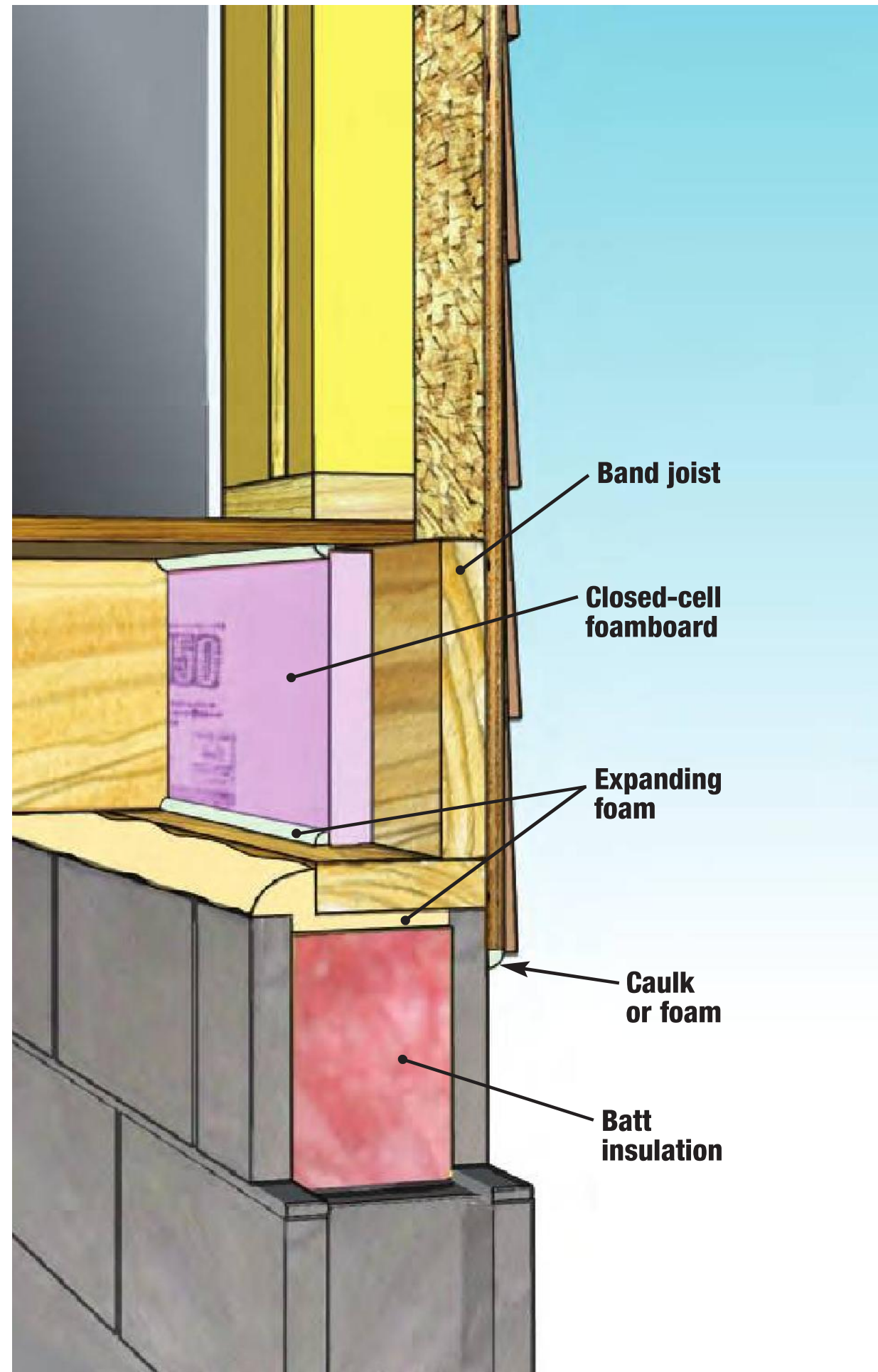
- **Electrical, cable and phone boxes located on perimeter walls:** Apply caulk or foam around the boxes and in holes; then cover the boxes with foam gaskets.

- **Baseboards:** Remove baseboards on outside walls and apply

caulk (or backer rod and caulk) in the gap below the wallboard.

- **Rim joists:** If you have an unfinished basement or access to a crawl space, insulate the rim joists with solid poly foam and seal the edges with expanding foam.

- **Plumbing and wiring chases:** Apply expanding foam in openings visible from the attic or the basement or under sink cabinets.



This illustration shows the proper way to seal around the band joist of a house that has a basement or crawl space. The closed-cell foam, sealed on the edges with expanding foam, provides an airtight seal and heat barrier. From the exterior, you can apply caulk or foam to fill gaps along the bottom edge of the sheathing.

Weather Wranglers

Infiltration Information

Air is essential. Fresh air, better yet. But when it comes to your living space, you don't want to inadvertently (or excessively) draw the outside air in to replace the air that you have heated or cooled. That inside/outside temperature contrast creates pressure differences, which then generate air movement. Here's how it works:

Cold (more dense) air sinks and seeks lower ground, while warm (lighter) air heads upward, finding escape through unsealed gaps and cracks on its way up. This creates a vacuum that sucks air in through lower-level entry points, and the flow, called the chimney effect, continues. (Speaking of which, if you have an open fireplace flue, your house really sucks — a lot of outside air is pulled in as conditioned air flows out. Keep the damper closed when the fireplace is not in use.)

On a windy day, air is pushed inside through cracks and gaps, raising interior air pressure. To balance the pressure, conditioned air escapes through openings on the opposite side of the house and toward the attic. It's enough to give you chills. — CB

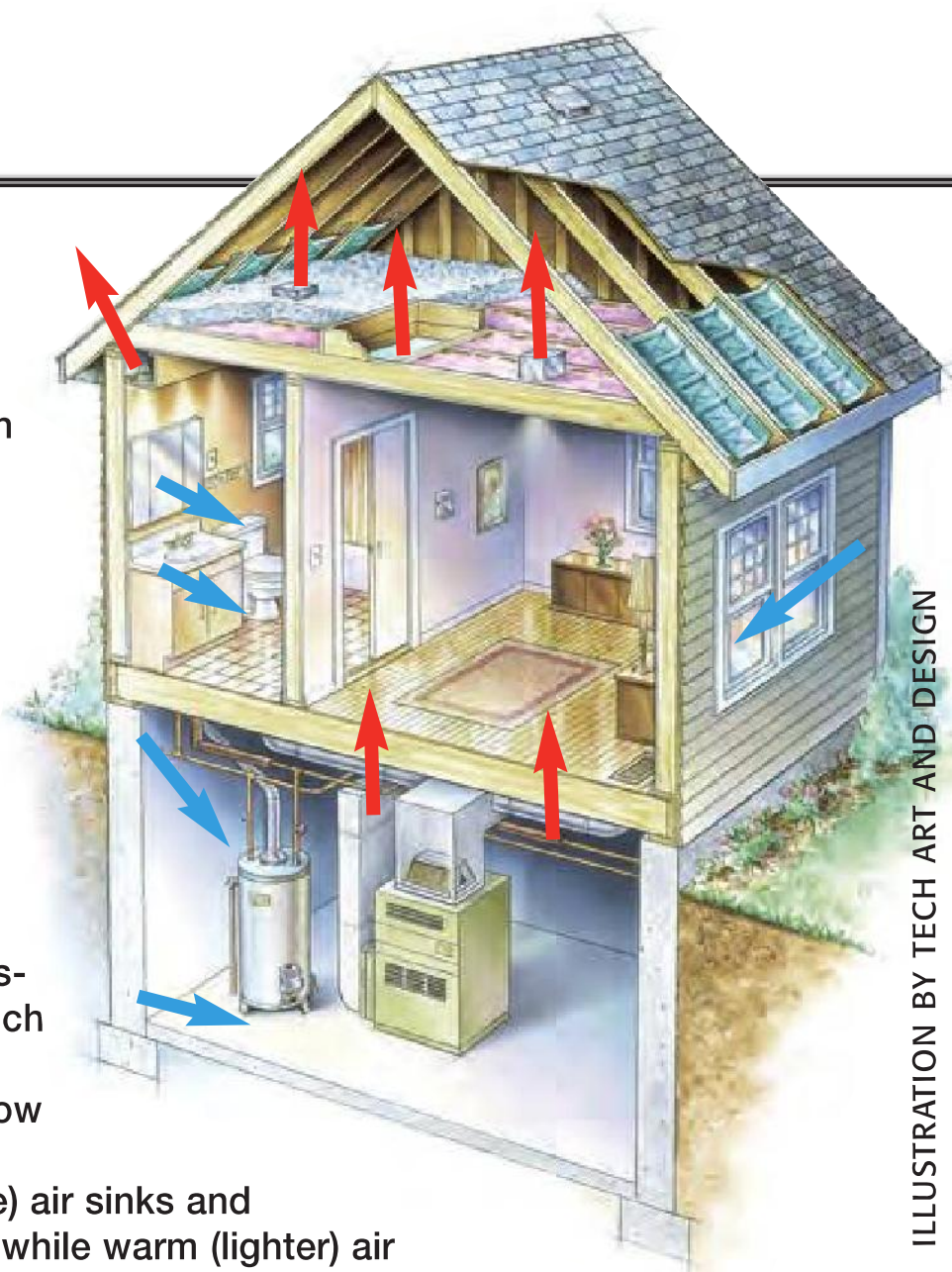


ILLUSTRATION BY TECH ART AND DESIGN

- **Seams in ductwork:** Where accessible, seal connecting points with metal tape or mastic.

- **Attic hatch:** Add insulation, a gasket and weight or latches to tighten the seal.

Exterior areas

- **Windows and door frames:** Replace cracked or missing caulk. (Be sure to remove old caulk and clean the surfaces.)

- **Concrete foundation:** Fill cracks with concrete patch.

- **Cladding:** Check for cracks, gaps or holes and fill them with caulk (or patch with stucco patch).

- **The joint between the foundation and the mudsill (or sill plate):** Run a bead of caulk (or use foam) to seal the seam and fill voids.

- **Chimney:** Apply caulk along the edges where masonry and siding meet.

- **Penetrations:** Caulk around hose bibs, cable entries, electrical boxes, vents or other items that break the home's barrier. ♦



Check these common air-intrusion points on the exterior of a house. Fill gaps that are larger than 1/2 in. with expanding foam or backer rod and caulk. Once the foam has cured, apply paint to protect it from UV damage. Smaller openings can be sealed with caulk alone. Paint is optional.

WEB EXTRAS

Read about what to expect from an energy audit and find additional fixes at www.HandymanClub.com.

SOURCES ONLINE

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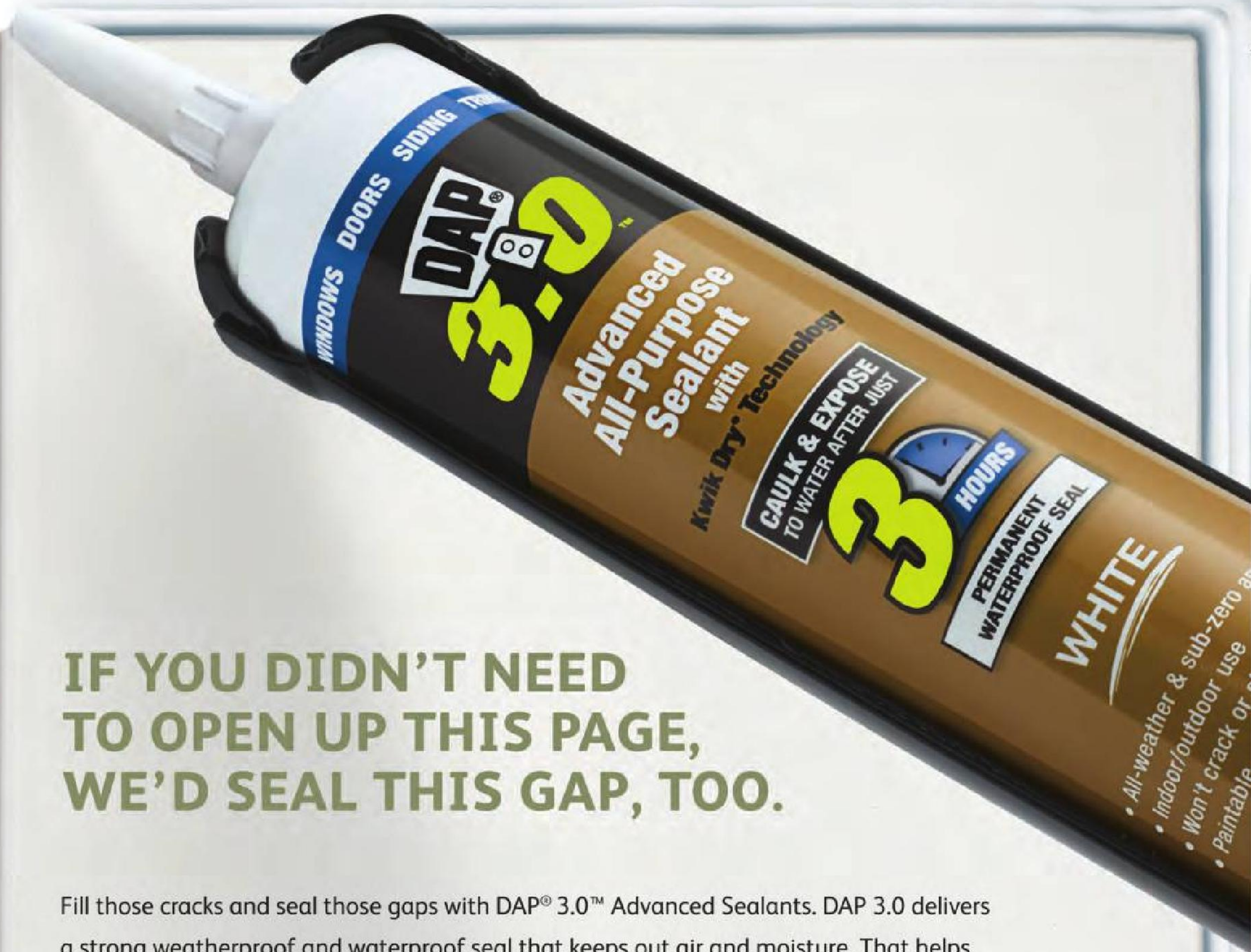
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Customize this decorative candle scone to fit any décor

BY MIKE BERGER

Metal and Flame

Candles are a great addition

to almost any outdoor space — their flickering light enhances the ambience, and in the case of citronella candles, their aroma can help to ward off insects. Although many styles and sizes of candle holders are commercially available, it's more fun to design and make your own.

This wall-mounted candle scone costs less than \$20 in materials. And with only four parts, it can be welded together in a matter of minutes. You can modify the simple design to suit many different types of décor: Cut round holes instead of the square openings, make it shorter or longer, change the profile of the top, choose a different type of finish — if you can imagine it, you can probably make it. In fact, the design possibilities are so numerous, you might be tempted to make more than one.

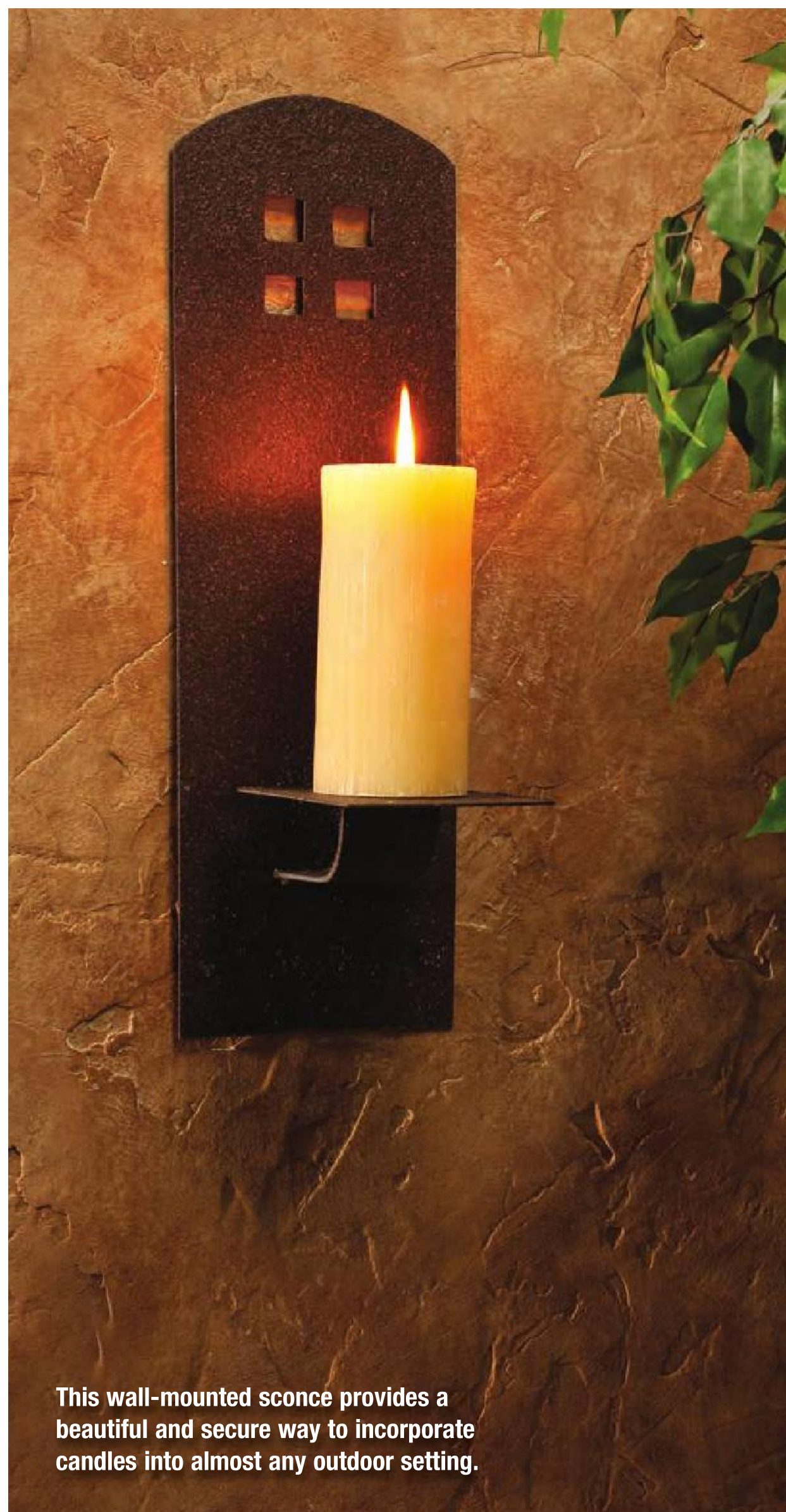
Cutting and welding

Start by scribing the outline of the back plate onto a sheet of 16-gauge steel. (I used a 6-in.-wide x 18-in.-long sheet that's readily available at many home-improvement and hardware stores to make the back plate). Use a jigsaw outfitted with a metal-cutting blade to cut along the scribed line (photo 1, p. 30); then use an angle grinder to ease any sharp edges or points. In a similar manner, cut and smooth a 4-in.-square steel plate to serve as the candle base.

Use a rotary tool outfitted with a metal-cutting wheel to create the four square decorative openings in the back plate (photo 2). Work slowly to avoid deforming the metal, and use a file to smooth the cut edges.

Clamp a length of 2-in.-wide, 16-gauge flat stock that will serve as the candle support bracket into a vise so that 4-1/2 in. of the stock are clamped within the vise jaws. Use a hammer and slowly bend the stock to 90 degrees (see drawing, p. 32); then cut the short end to 1-1/2 in. (photo 3). Use some scrap lumber to help brace and position the support bracket so that it is 3 in. from the bottom edge of the back plate and centered from side to side, and weld it in position (photo 4, p. 31). If you're working with a wire-feed welder as I did, make sure to set both the wire-feed speed and the voltage to the appropriate settings for the metal you're working with so you don't inadvertently burn through the workpiece. If you're unsure about either setting, practice on some scrap metal first.

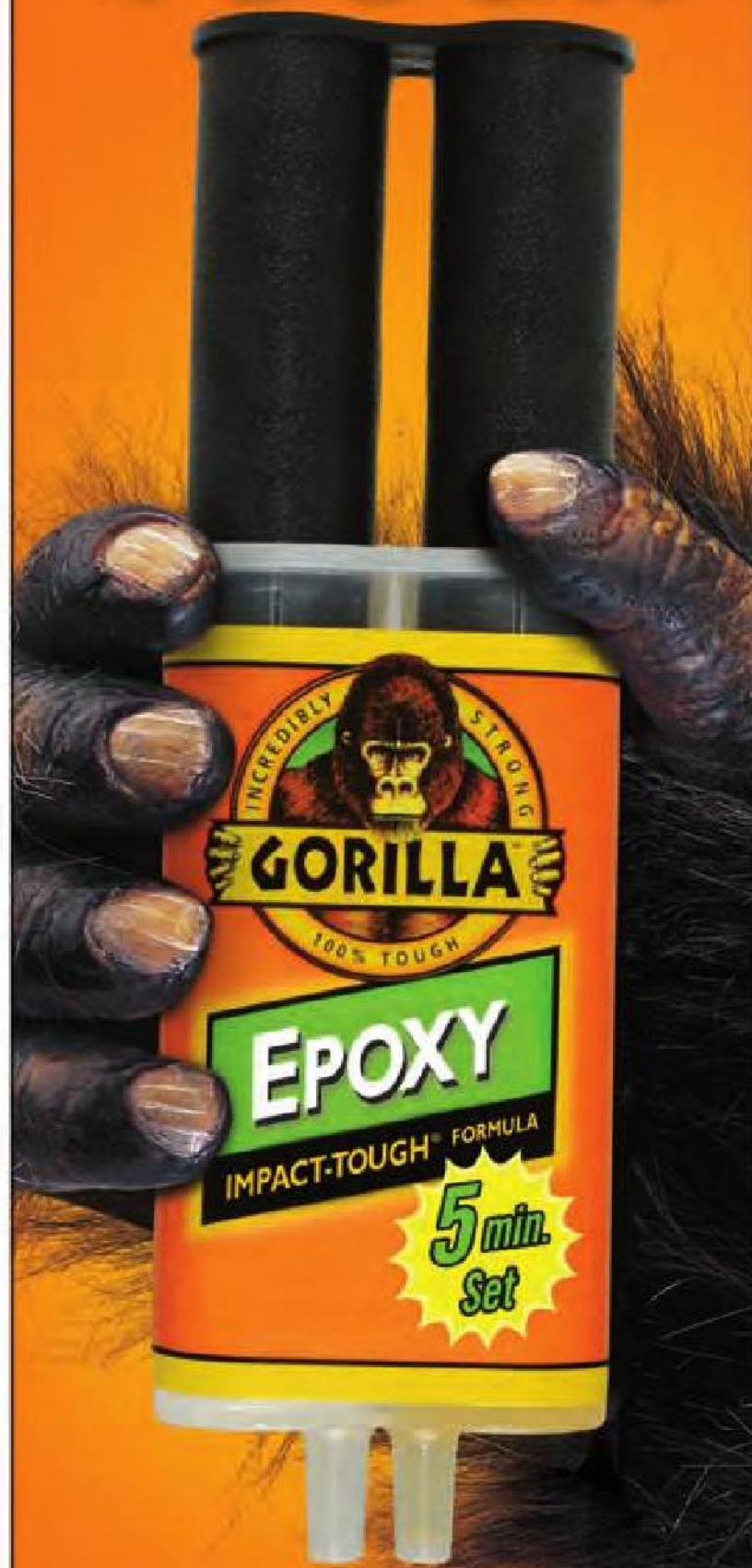
Hold the square candle base in position centered on the support bracket and tack weld it in place (photo 5). Check



This wall-mounted scone provides a beautiful and secure way to incorporate candles into almost any outdoor setting.

PHOTOGRAPHY BY PHIL LEISENHEIMER AND MIKE ANDERSON;
ILLUSTRATION BY MIKE ANDERSON

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1

Use a carbide-tipped scribe to etch your design onto the steel. Clamp your work-piece securely to the welding table; then use a jigsaw (with a metal-cutting blade) to cut the profile.



2

Use a rotary tool outfitted with a metal-cutting wheel to create the four decorative square openings. Make your cuts from the back side of the back plate, and use a file to smooth the cuts.



3

Cut the candle support piece so that it is 4-1/2 in. long on one side of the 90-degree bend and 1-1/2 in. long on the other.



Locate the candle support so that it's 3 in. from the bottom edge of the back plate and centered from side to side; then use a scrap of 2x4 as a brace to help position the rod as you weld it to the back plate.



Weld the candle base to the candle support. Notice the scrap lumber that helps properly position the steel during the welding process.

to make sure that the base is level and then complete the weld. Cut a 3-in. length of 1/8-in.-dia. rod to serve as a candle support. Sharpen one end and weld the other end to the center of (and perpendicular to) the candle base (photo 6, p. 32).

Finally, wipe the sconce with mineral spirits to remove any oils or residue and then paint it. I used Rust-Oleum's Mineral Brown Stone Spray;

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you can choose from a wide variety of finishes, including hammered, antique, crackle and even mirrored, available from Rust-Oleum and other manufacturers. In fact, so many finishes and colors are available that choosing just one may be the hardest part of this project! ♦

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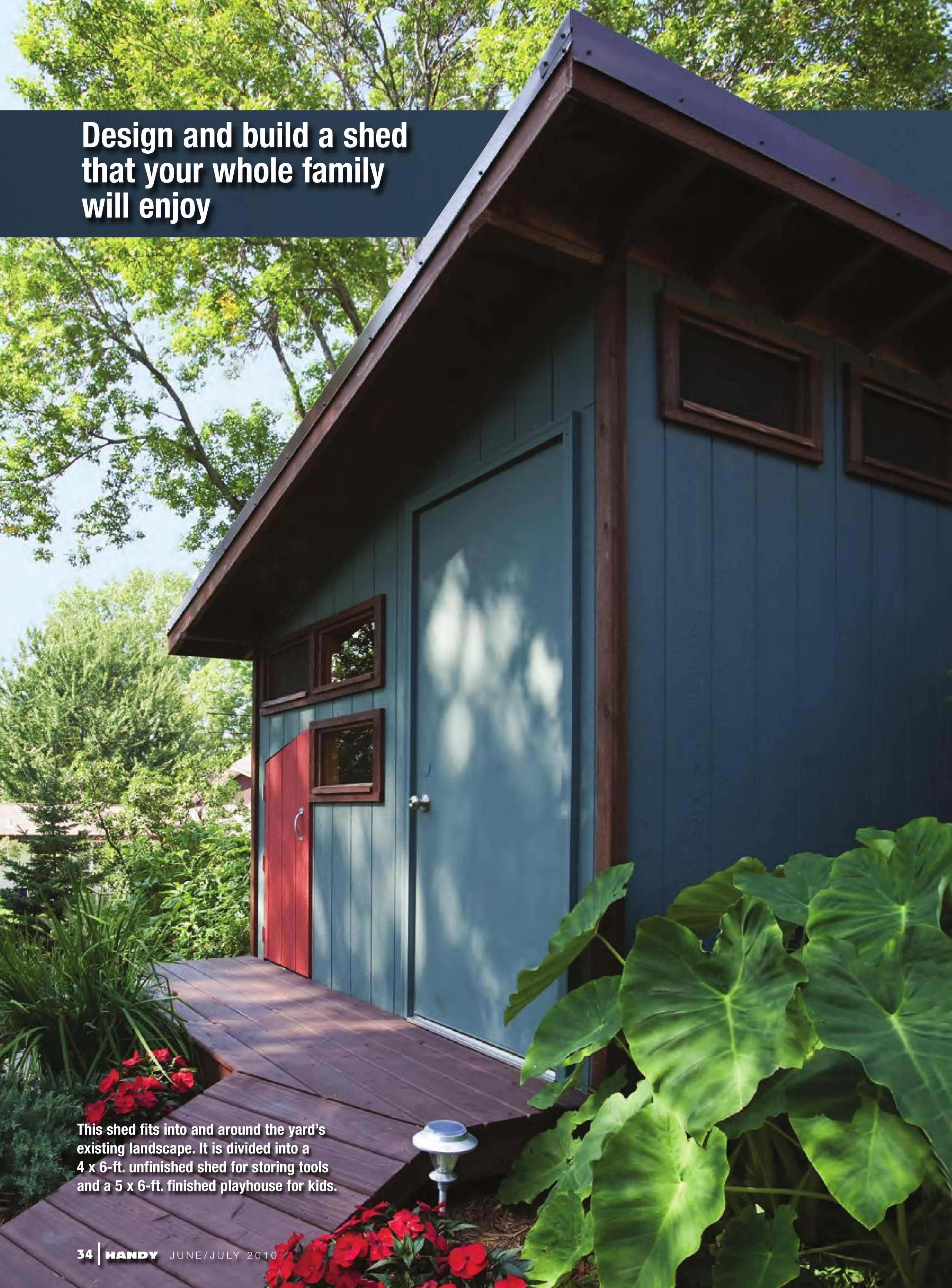
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DOUBLE-DUTY SHED

BY DAN CARY

My favorite projects

are the ones I design and build from scratch — making something just the way I want it. I don't know whether I'll ever get to design and build my own home, but I did experience the satisfaction of custom building on a smaller scale with this combination shed and playhouse.



I wanted to build a shed for myself and a playhouse for my kids, but I didn't want two small buildings in my backyard, so I decided to combine them. When the kids have outgrown the playhouse (which I'm afraid will be sooner than I'd like), I can remove the divider wall and have twice as much shed space. Or maybe I'll leave the wall in place and use the playhouse as my personal hideout (or doghouse, depending on who you ask in my family).

Building a shed from scratch takes more time than assembling a kit, but it allows you to practice basic construction techniques and try out design ideas and materials you haven't used before. Furthermore,

you can choose better materials and end up with a much higher-quality structure for less money than you would spend on a comparable kit. The cost for the materials to build my shed, including the base, was just over \$2,200.

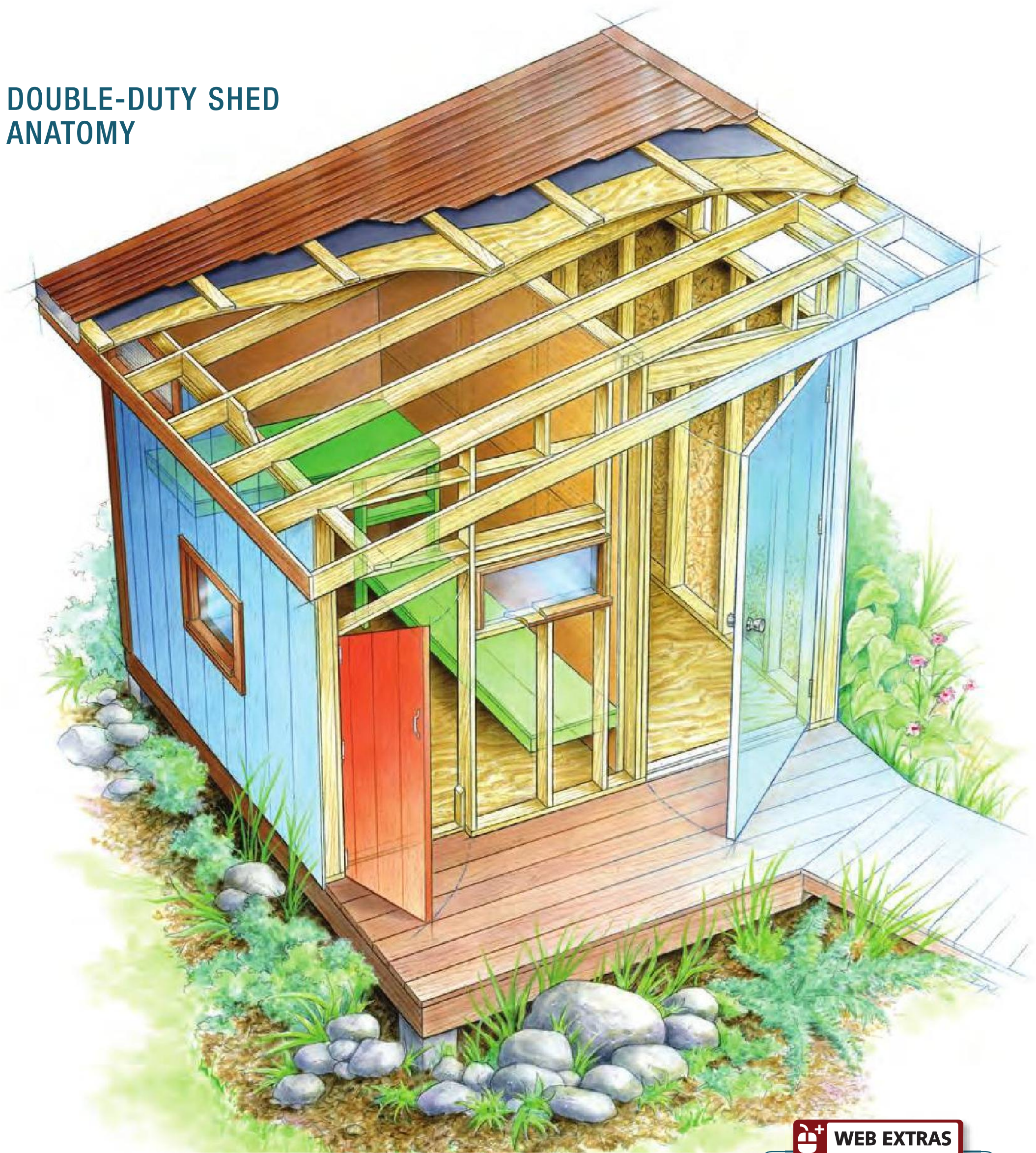
DESIGNING THIS SHED

While designing the shed, I kept the style simple and chose a single-slope roof that would be easy to build and would complement my ranch-style house. A divider wall and separate doors make the shed a dual-purpose, two-room structure. Although the tallest wall is typically the front of a single-slope-roof shed, I rotated the design 90 degrees and made one of the sloped walls the front, an approach that worked perfectly with the adult- and kid-size doors (see photo, opposite).

I didn't want the shed to look isolated or to stand out as an obviously new feature in my backyard. The easiest way to make something look like it's been part of the landscape for a long time is to surround it with large mature plants, but that wasn't in my budget. So I looked within the most established areas of my backyard landscape for a suitable location. I cleared a site that was flanked by an evergreen and a large stand of lilacs. The mass and maturity of the evergreen and lilacs give the shed a grown-in feel. I then filled in around the rest of the shed with rocks, smaller plants and shrubs.



DOUBLE-DUTY SHED ANATOMY



The shed walls and roof are framed with 2x4s and 2x6s spaced 16 in. OC. The exterior is clad with 3/8-in.-thick siding panels, and the roof is sheathed with 3/4-in.-thick plywood. The interior divider wall is built so that it can be easily removed later. It is framed with 2x4s spaced 24 in. OC. The playhouse interior is clad with 1/4-in.-thick paneling.



WEB EXTRAS

To see the framing plans and a shopping list and learn more about the construction of this shed, go to www.Handy10.com

In addition, a few of the shed's features help it blend into the landscape. First, the sloped roof matches the slope of the backyard. Second, the dark body color is a couple of shades darker than my house trim color, and it blends with the surrounding foliage colors. The brown-stained trim ties in with the woody parts of the trees and shrubs. For a final integrating touch, I pushed an existing boulder close enough to the shed that I had to build the front edge of the deck landing around it (see top photo, p. 35).

The footprint of the shed was dictated by the limited space available. I didn't want it to be any taller than necessary, but I also didn't want to crouch inside it. I chose to

make the short side wall 6 ft. tall; then, using a 3:12 roof pitch (the minimum recommended for the roofing material I had chosen), I calculated the height of the remaining walls. (See Web Extras for complete framing plans.) Note: Before you start designing, check with your city inspections department for construction and setback requirements.

BUILDING THE BASE

The foundation is relatively easy to build because small sheds typically aren't required to have footings. The base should be level and feature some type of solid perimeter that the walls can be anchored to. If you are building on

ILLUSTRATION BY TECH ART & DESIGN



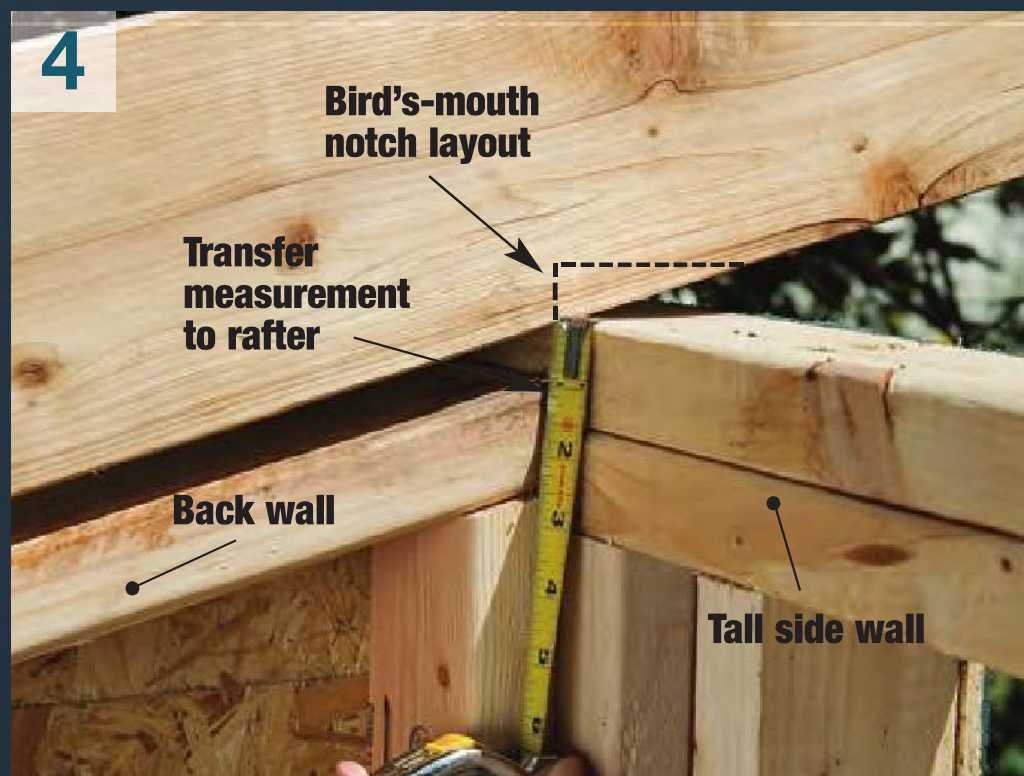
1 Attach the top and bottom plates to the outside studs; then install the full-height interior studs, the horizontal framing and finally the cripple studs (the short vertical framing members that fill in above and below window and door openings).



2 Drill 3/8-in.-dia. starter holes in the corners of all window and door openings. Use a jigsaw to cut the openings. Don't cut through the bottom plate — you'll use a handsaw or reciprocating saw to do so after the wall has been installed.



3 Paint the exterior of the walls. When the paint is dry, recruit a helper and raise the walls onto the platform. Check that each wall is plumb and square before you screw it to the other walls and to the deck framing. Attach the back wall first, then the side walls and finally the front wall.



4 Position one of the rafters over the back wall. Mark the side-wall locations and measure the distance from the top of the back wall to the top of the tall side wall to determine the height of the bird's-mouth notches. Cut the notches in one rafter and then use it as a template for the others.

level ground, you could construct a low deck, pour a concrete slab or simply build a timber frame for the perimeter and fill the interior area with pavers or compacted gravel. I think a low deck is the easiest approach to a sloped site, so that's what I built.

The deck is supported by a row of solid concrete blocks under the front and back rim joists. Each block rests on a 6-in.-deep bed of compacted gravel. The ground slopes down roughly 8 in. from the back of the shed, so I dug the holes for the back blocks roughly 8 in. deeper than the holes for the front blocks. Then I adjusted the depth of the gravel until all of the blocks were level.

The rectangular deck, framed with

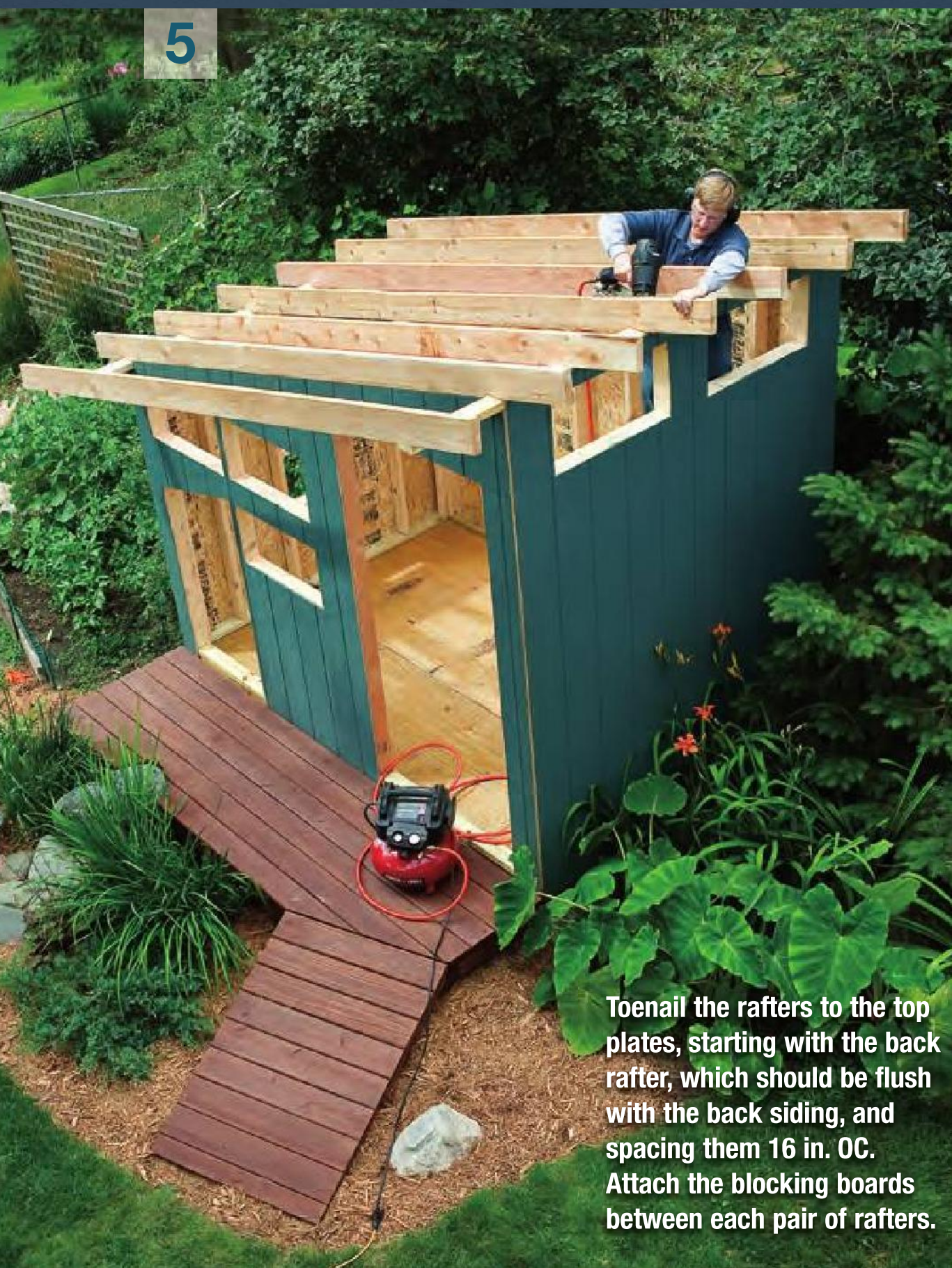
2x8s, supports the shed. I also framed a small landing that is attached to the main deck and supported by a couple of additional concrete blocks. For the interior floor I used pressure-treated plywood, which is easy to clean and will keep most unwelcome intruders, such as insects and small animals, out of the playhouse. The landing is clad with cedar deck boards.

FRAMING THE WALLS AND ROOF

You can cut a lot of corners when you're framing a building that is considered a temporary structure. The manufacturers of shed kits include only the minimum amount of materials necessary, and that makes sense from a retail-sales standpoint. But the little bit of money I'd

save by leaving out a few pieces of framing and using smaller-dimension materials isn't worth the time it would take me to determine which pieces to leave out — and the structural strength I'd sacrifice. I'd rather stick with standard framing practices, especially for a structure that my kids will be playing in.

It's often easiest to frame the walls on the deck and then raise them into place. But I was building around a lot of established plants, so rather than risk destroying the landscaping, I built the walls on sawhorses set up in another part of the yard. I framed the sides and back wall with 2x4 studs spaced 16 in. OC. Both side walls also feature a top plate that extends 18 in. beyond the front wall. This extra



Toenail the rafters to the top plates, starting with the back rafter, which should be flush with the back siding, and spacing them 16 in. OC. Attach the blocking boards between each pair of rafters.

LESSON LEARNED



Installing the shed's metal roof taught me a hard lesson about the importance of positioning the panels so that the rake (angled roof edge) flashings connect correctly. The rake or gable flashing is designed to contact and fasten to a specific section of the roof panel (either on a ridge or on a flat section between the ridges). If you simply attach the roof panels and cut the overhanging excess off of the last panel, the rake flashing may not fit correctly. In that case, you'll either have to order a different style of flashing (which can take a couple of weeks to arrive) or do what I did: remove all of the screws, shift the panels and trim the opposite overhanging edge so that both rake flashings fit (not a fun process).

To avoid this mistake, lay the panels out on the ground, check how the flashing is designed to fit and then determine how much to trim off. You might be able to cut the excess off of one panel, or you might have to split the difference and cut some off of both rake-edge panels. — DC

length supports the fly rafter and roof overhang on the front of the shed.

Building the front wall wasn't as easy because it contained the rough-opening framing for three windows and two doors (photo 1, p. 37). I added vertical framing members at 48 in. OC where the siding panel seams would be located.

Rather than raise the walls and fight gravity, I attached the siding, cut out the window and door openings (photo 2) and painted the siding before I raised the walls. I used Louisiana Pacific SmartSide panels, which serve as both the sheathing and siding.

You'll need a helper to raise the walls. Secure each wall to the deck framing and the adjoining walls (photo 3). Check each wall to be sure that it is plumb and square to the adjoining wall.

The roof is framed with rafters that rest on the side walls. A bird's-mouth notch is cut in each rafter where it rests on the side walls (photo 4). Attach the rafters to the top of the side-wall top plates (photo 5, above), and attach blocking between rafters.

INSTALLING THE METAL ROOF

Any roof material that is used on a house can be used on a shed. I chose metal panels (roughly double the cost of asphalt shingles) because they have a commercial appearance that works with the shed's style. I was also interested in learning more about this product, which has become increasingly popular in residential structures.

Exposed-fastener metal roofing is relatively simple to install (see photo 6 and Web Extras), but figuring out all of the seals, screws and flashing components you need can be a little con-

fusing. Most home centers sell this type of roofing and should be able to help you determine what you need.

The panels and flashing components are made from 24- to 30-gauge steel. The panels are typically 3 ft. wide and are bundled and shipped in stacks that are very heavy and awkward to handle, so it's worth the money to have them delivered to your house. Once you remove the strapping, a single panel can be lifted into place by two people. Most metal roof systems include instructions on how to handle and install the components. (See "Lesson Learned," above, for a tip you won't find in the manual.) It only took an afternoon for me to install the roof.

BUILDING WINDOWS AND DOORS

With the roof in place, I moved on to the windows and doors. I installed a prehung out-swing steel door in the

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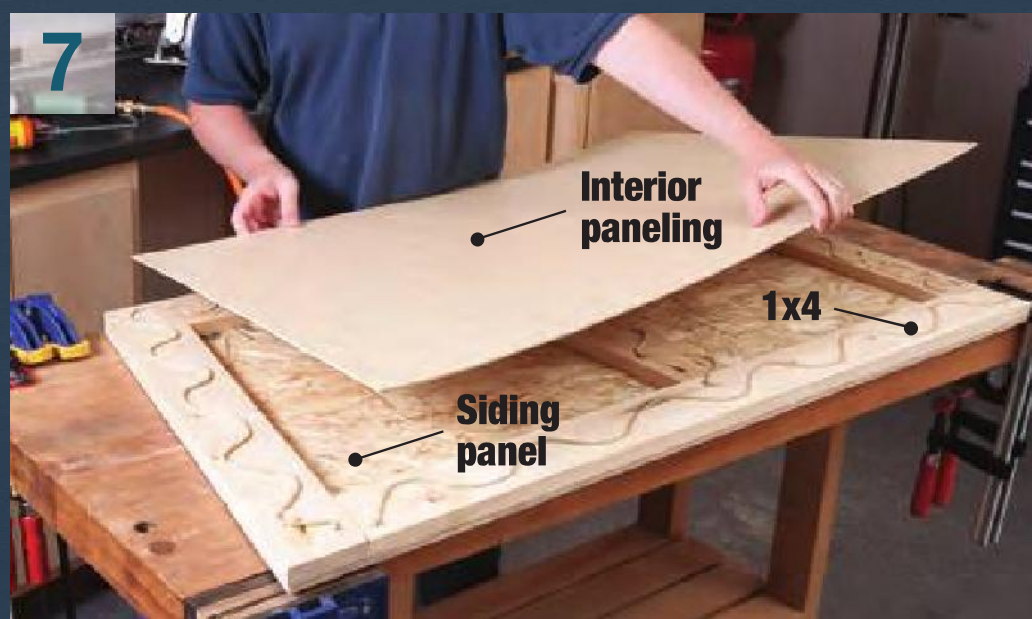
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Follow the manufacturer's instructions for installing the metal roof panels, flashing components and weather strip-ping. The panels are fastened to the roof with 1-in. screws that feature rubber gaskets under the heads. The panel overlaps are secured with self-tapping metal stitch screws.

WEB EXTRAS

To see more photos and learn more about metal-roof installation, go to www.HandymanClub.com and click on WEB EXTRAS.



The faces of the small door are attached to a 1x4 wood frame with exterior-rated glue and 1-in. brad nails. The outside face is the exterior siding, and the interior face is the 1/4-in. interior paneling used on the playhouse walls.



Secure the window frames in the openings with 2-in. screws. Then install an acrylic panel and interior trim pieces. (If you prefer, you can install screening instead of acrylic.) Finally, attach the exterior trim boards with 2-in. galvanized finish nails.

large opening. Because the deck boards on the landing are 1/4 in. thicker than the plywood, I installed the door on top of a piece of the siding material, which raised it enough that it could swing freely over the deck boards. (I accounted for this during framing by making the rough opening 1/4 in. taller.)

For the playhouse, I made a small custom hollow-core door using a piece of siding panel for the exterior face, 1x4s for the core frame and a piece of interior paneling for the interior face (photo 7). I was careful to position the exterior face so that the grooves aligned with the grooves on the shed siding.

Next, I built the eight window frames out of 1x cedar and pine. To speed up construction, I designed the shed so that seven of the windows were the same size. I stained all of the

window frames before installation (photo 8). I installed screens in the windows that are most protected by the roof overhangs and acrylic panels in the other frames.

The window, door and corner trim is made from 1x3 and 1x2 cedar. All of the trim pieces intersect with simple butt joints. To make finishing easier, stain all of the trim before attaching it to the shed.

FINISHING TOUCHES

The divider wall inside the shed isn't structural; it simply separates the two spaces. I framed it with 2x4s and attached 1/4-in. paneling to the playhouse side. I used the same paneling on the rest of the playhouse walls. I also built a couple of 2 x 4-ft. platforms for the kids to sit on and under. (Rather than do too much inside, I wanted to let the kids decorate it as

they like.) On the shed side, I left the studs exposed and simply installed a few hangers for garden tools.

You can find plans online (see Web Extras) for the shed that I built. However, I encourage you to use the information only as a starting point. Modify the plans to suit your needs, or create a new design that's perfect for your yard. Don't be afraid to add a few custom features that you enjoy. This is your opportunity to build a structure exactly the way you want it. Maybe one day you'll get to build the home of your dreams, but in the meantime, have fun building your dream shed. ♦

WEB EXTRAS

To find plans for more sheds, go to www.HandymanClub.com and click on WEB EXTRAS.

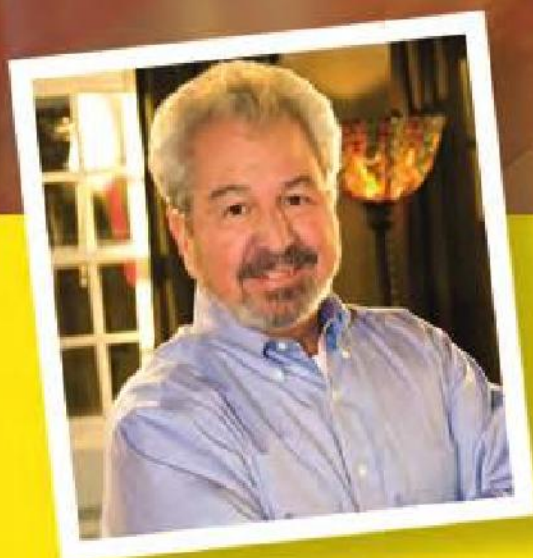
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Privacy with Panache

DEFINE your outdoor space with this **REFRESHING**
take on a **CEDAR FENCE** by Jenny Stanley



You don't have to build

a gigantic wooden enclosure to gain more privacy in your backyard. With just a few simple-yet-stylish cedar panels strategically placed among soft evergreens, you can create a charming divider that provides personal space while maintaining an open landscape design.

This three-panel project can be built on-site and installed in a few easy steps. It requires less material and work than building a full-size fence, so you'll save both time and money. But before you can begin the construction process, you must first nail down a few details.

For starters, figure out where you'd like to place the structures. Consider drainage: Stay clear of areas that tend to collect water. Also take stock of your sight lines. Determine which

potential positions will offer the most privacy without blocking your favorite views. Finally, consult city officials regarding your plans and obtain a lot survey. Be prepared to make adjustments to the project to suit your area's building codes. It's also a good idea to inform your neighbors before you start digging.

When it comes to materials, you have myriad options. We chose cedar because it's readily available, naturally weather-resistant and affordable. Refer to the shopping and cutting lists and the illustration on p. 44 to determine the amount of cedar you'll need to build the three 8x6-ft. panels shown in this article. Landscape designer Scott Reynolds of Minnetonka, Minnesota, who designed this project, recommends inspecting boards carefully before you buy to make sure that

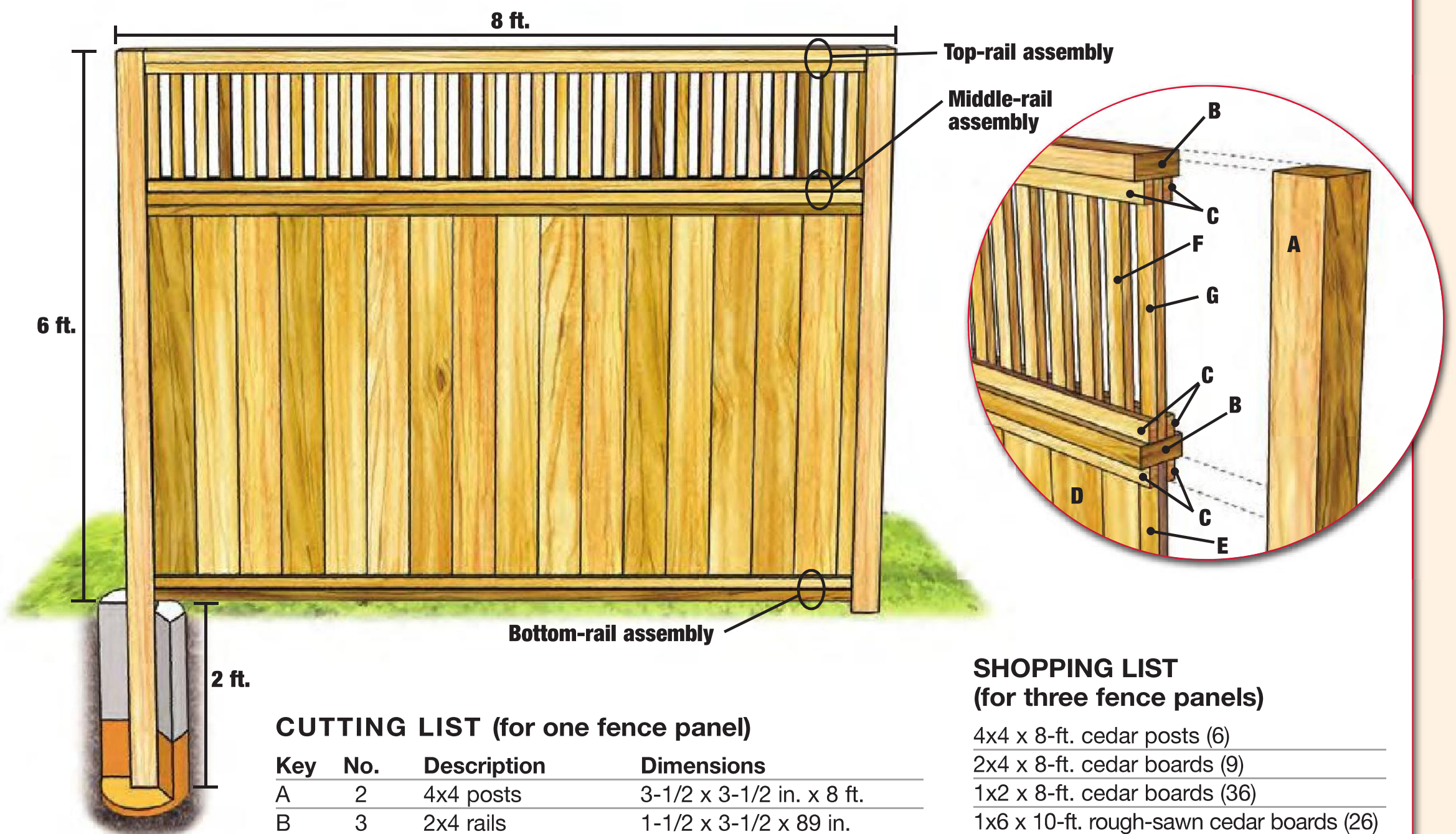
every piece is straight, which will ease the construction process and ensure warp-free fence panels. Other durable fence materials include composite, vinyl and steel.

Setting posts

Once you've taken the preliminary measures and purchased materials, kick off the project by locating your property line. Most residential areas are equipped with underground stakes that mark the corners of each lot; refer to your lot survey for their locations. (You may need to hire a surveyor for this step.) Insert your own stakes next to the property markers and connect them with bright-color string (photo 1, p. 46). This will help you to visualize your yard's boundary. Many city codes require some breathing room between a property line and any struc-



Fence Panel Construction



CUTTING LIST (for one fence panel)

Key	No.	Description	Dimensions
A	2	4x4 posts	3-1/2 x 3-1/2 in. x 8 ft.
B	3	2x4 rails	1-1/2 x 3-1/2 x 89 in.
C	8	1x2 backer boards	3/4 x 1-1/2 x 89 in.
D	16	1x6 fence boards	3/4 x 5-1/2 x 54-1/2 in.
E	1	1x6 filler board	Rip to fill leftover space
F	29	1x2 slats	3/4 x 1-1/2 x 12 in.
G	1	1x2 filler slat	Rip to fill leftover space

SHOPPING LIST (for three fence panels)

4x4 x 8-ft. cedar posts (6)
2x4 x 8-ft. cedar boards (9)
1x2 x 8-ft. cedar boards (36)
1x6 x 10-ft. rough-sawn cedar boards (26)
Concrete mix
Exterior wood screws
Exterior wood finish
Soft evergreen trees (6)
Potting soil

“For this project, it’s especially important that you use straight cedar boards. Keep that in mind when purchasing your lumber.”

— Scott Reynolds, landscape designer

ture that you build in your yard, so measure this distance and move your stakes and string (or add another set) accordingly. All fence panels will back up to this new line.

Use spray paint or another visual aid to mark your post placement (photo 2). Each fence panel has two 4x4 posts spaced 8 ft. apart from outside edge to outside edge. The distance between fence panels can vary depending on your preferences. For this project, the panels are spaced 8 ft. apart.

Dig an 8-in.-dia. x 2-ft.-deep hole for each post (photo 2 inset). Reynolds recommends marking your

digging tool at 2 ft. to provide a visual depth reference as you work. (Note: If you are attaching the fence panels to a permanent structure such as your home, you may need to set the posts below your area’s frost line; check your city building codes.)

Next, place a 4x4 post in the center of each hole and add about 4 in. of soil around all sides to hold it in place (photo 3). Check that the post is level before tamping the dirt with the end of a 2x4. Once all of the posts are secure, mix the concrete and continue to check that the post is level as you pour the concrete into each hole. Reynolds suggests protect-

ing the posts with plastic wrap to prevent the concrete from staining the wood (photo 4). Work out any air bubbles; then smooth the surface. Allow the concrete to set according to the package directions.

Building fence panels

With the posts in place, you can start building the fence panels. Measure and cut the wood as you build rather than all at once so you can make slight size adjustments as needed. (This is particularly important if your yard slopes.) Drill pilot holes for every screw to prevent splitting.

Construct the bottom-rail assembly first. Draw a line along the top of the rail (B) 5/8 in. from the edge that will face your yard. Attach the backer board (C) along this line as shown in photo 5. Secure this assembly 1 in. above the ground between the 4x4 posts (photo 6), and be sure to check



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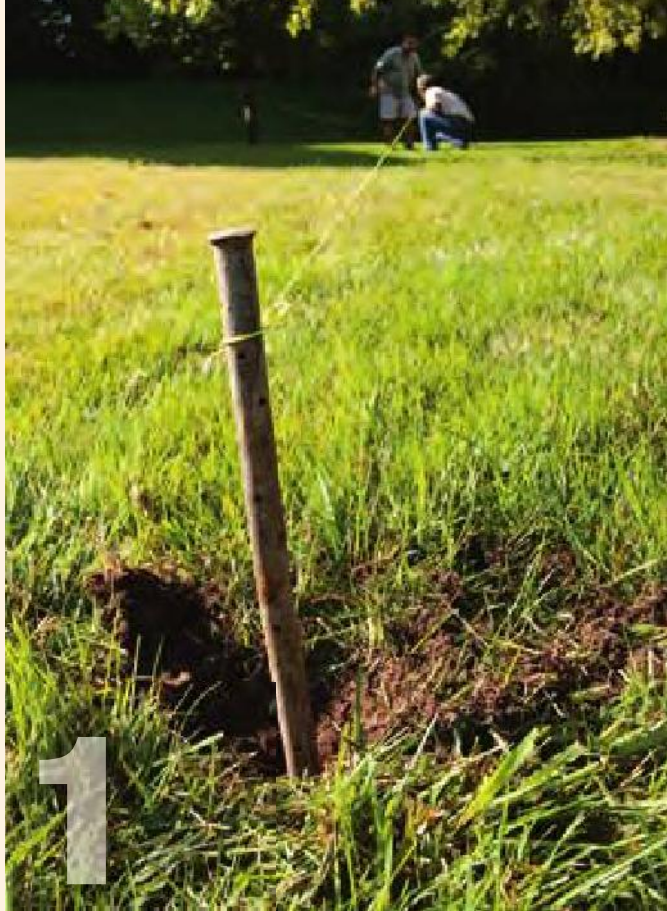
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Use stakes and string to mark your property line and the location of the fence panels.



Mark the post placement every 8 ft.; then dig an 8-in.-dia. x 2-ft.-deep hole at each mark.



Center and level a post in each hole, adding 4 in. of soil on all sides to hold the post in place.



Secure plastic wrap around the bottom of the posts to prevent staining. Fill each hole with concrete and work out any air bubbles.



Install the bottom-rail assembly 1 in. off the ground.



For the bottom-, top- and middle-rail assemblies, mark a line along the top of part B $\frac{5}{8}$ in. from the yard-facing edge. Secure part C along this line.

that it is level. A couple of scrap 1x2s placed underneath the bottom-rail assembly will help to hold it in place as you drill holes and drive screws.

Construct the top-rail assembly in the same way and install it between the 4x4 posts so that the distance from the ground to the top of the top rail measures exactly 6 ft. (This is the typical fence-height limit for most

residential areas.) You should now have a basic fence-panel frame.

Next, construct the middle-rail assembly using a rail (B) and backer board (C) as previously described. Use a slat (F) to mark the installation location of this assembly. The 12-in. slat should fit snugly between the 2x4s of the top- and middle-rail assemblies. Once the middle-rail assembly is



Add another part C under the middle-rail assembly 5/8 in. from the yard-facing edge.



Working from the back of the fence panel, screw part D to the 1x2s of the middle- and bottom-rail assemblies.



Use part F as a spacing guide when installing the slats between the top- and middle-rail assemblies.

installed, attach another backer board to the underside of the 2x4 5/8 in. from the yard-facing edge (photo 7).

Now you can attach the fence boards (D). Working from the back, screw the fence boards to the backer boards of the middle- and bottom-rail assemblies (photo 8). You may need to use a hammer and scrap wood to pound the boards into place; make sure that the edges are flush. Rip the final filler board (E) to fit.

Install the slats (F) between the top- and middle-rail assemblies. Work from the back as you did with the fence boards. To simplify spacing, use one of the slats as a guide (photo 9). Rip the final filler slat (G) to fit.

Finish by installing four backer boards (C) along the back of the panel as shown in photo 10. These should cover all of the screws used to attach the fence boards and slats. After you've completed the fence panel, use a circular saw to trim the tops of the 4x4 posts so that they are flush with the top rail.

Spray or brush on a few coats of exterior wood finish. Be sure to check the label for how often you should reapply it to keep the panels looking good.

Planting trees

To fill the spaces between fence panels, Reynolds recommends choosing soft evergreen trees that require minimal maintenance. For example, Techny Arborvitae (photo, right) boasts a soft look and feel and can



Add four backer boards (part C) along the back of the panel to cover the screws that you used to attach parts D, E, F and G.

be trimmed to remain the same height as the panels. In general, groups of three are aesthetically pleasing, which is why Reynolds and the homeowners decided to plant groups of three trees between each pair of panels.

To allow for growth, be sure to plant the trees about 3-1/2 ft. apart and 2 ft. away from the fence panels. Reynolds suggests mixing nutrient-rich potting soil with the soil from your yard when filling the holes to help hold moisture and give the trees a healthy start. (For an article about how to plant the trees used for this project, see WEB EXTRAS.) Pruning the trees is simple: Shape the outside branches with shears and clip the tops to the height you prefer. ♦



WEB EXTRAS

To find step-by-step instructions for planting the trees in this article, go to www.HandymanClub.com and click on WEB EXTRAS.



WEB EXTRAS

For plans and photos showing how to build these fountains, go to www.Handy10.com



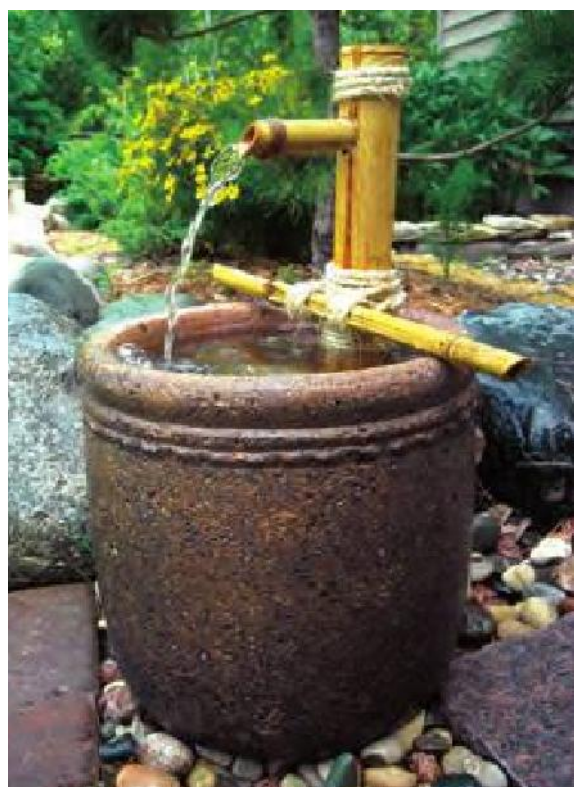
SIMPLE

WATER

Create a custom water feature that's perfect for your space

FOUNTAINS

BY DAN CARY



You don't have to have a large space, a big budget or even big muscles to build a water feature into your landscape. Although large ponds and waterfalls are beautiful, you can achieve much of the same ambience (with much less work) by creating a small fountain.

Fountains are easier to build and maintain and much less expensive than large water features. And you can install them in locations where it would be nearly impossible to create a large pond, such as in a small garden or on a deck or balcony.

Designing your own fountain is probably easier than you think. There are only three functional components: a spout, a reservoir and a pump. The pump is hidden, so the flow rate is the main variable you'll need to consider when you choose one (see "Pump

PHOTOGRAPHY BY MIKE ANDERSON, DAN CARY AND TRACY WALSH
ILLUSTRATIONS BY MIKE ANDERSON

Basics," below). On the other hand, the spout, the reservoir and any decorative materials you add provide ample opportunity to exercise your creativity.

The spout can be any object that water will pour from. It can be natural, such as a rock, or man-made, such as a concrete pillar or something more whimsical such as an old watering can. Just about any object can serve as a spout as long as you can feed the water-supply tube through it so the water comes out where you want it to.

The reservoir contains the water supply and the pump. Ponds are the obvious reservoir of choice for large water features — they're functional, natural and beautiful. For small fountains, a decorative container such as a ceramic pot or wood barrel works well. You can also use a plastic tub or bucket, but you'll probably want to hide it inside the fountain structure or bury it under the fountain.

You can combine the spout, reservoir and decorative materials to create just about any size, shape and style of fountain you desire. On the following pages you'll find three common approaches to fountain construction: an above-ground hidden reservoir, a below-ground hidden reservoir and a man-made exposed reservoir. Take a look at these ideas and then keep an eye out for interesting objects you could combine to create your own unique design.



PUMP BASICS

Small fountains don't require a raging water flow, so in most cases a submersible pump with a flow rate of 50 to 200 gallons per hour (typically \$30 to \$60) will do the job. If you're trying to decide between two pump sizes, choose the one with the higher flow rate. You can always reduce the flow, but you can't increase it if it's too anemic. A built-in flow-rate control is a convenient feature, but you can also install an in-line valve to adjust the flow.

All outdoor pumps should feature a grounded three-wire power cable

and be plugged into a ground-fault circuit interrupter (GFCI) outlet. If your fountain is not near a convenient power source, consider a solar-powered pump. Most solar pumps will move enough water for a small fountain. You'll pay more for a good-quality model, but it will cost less than installing a new outlet near the fountain.

Follow these tips for maintaining your pump:

- Don't let the reservoir dry out. Maintain a water level that's deep enough to keep the pump submerged.
- Keep the pump clean. Remove and brush off debris around the pump every week.
- Use the hose diameter recommended by the pump manufacturer. — DC



Cedar Planter Fountain



Assemble the 2x4 interior framework with 2-1/2-in. exterior-rated screws. Apply exterior finish to all sides of the siding boards; then attach them to the frame with 2-in. brad nails.



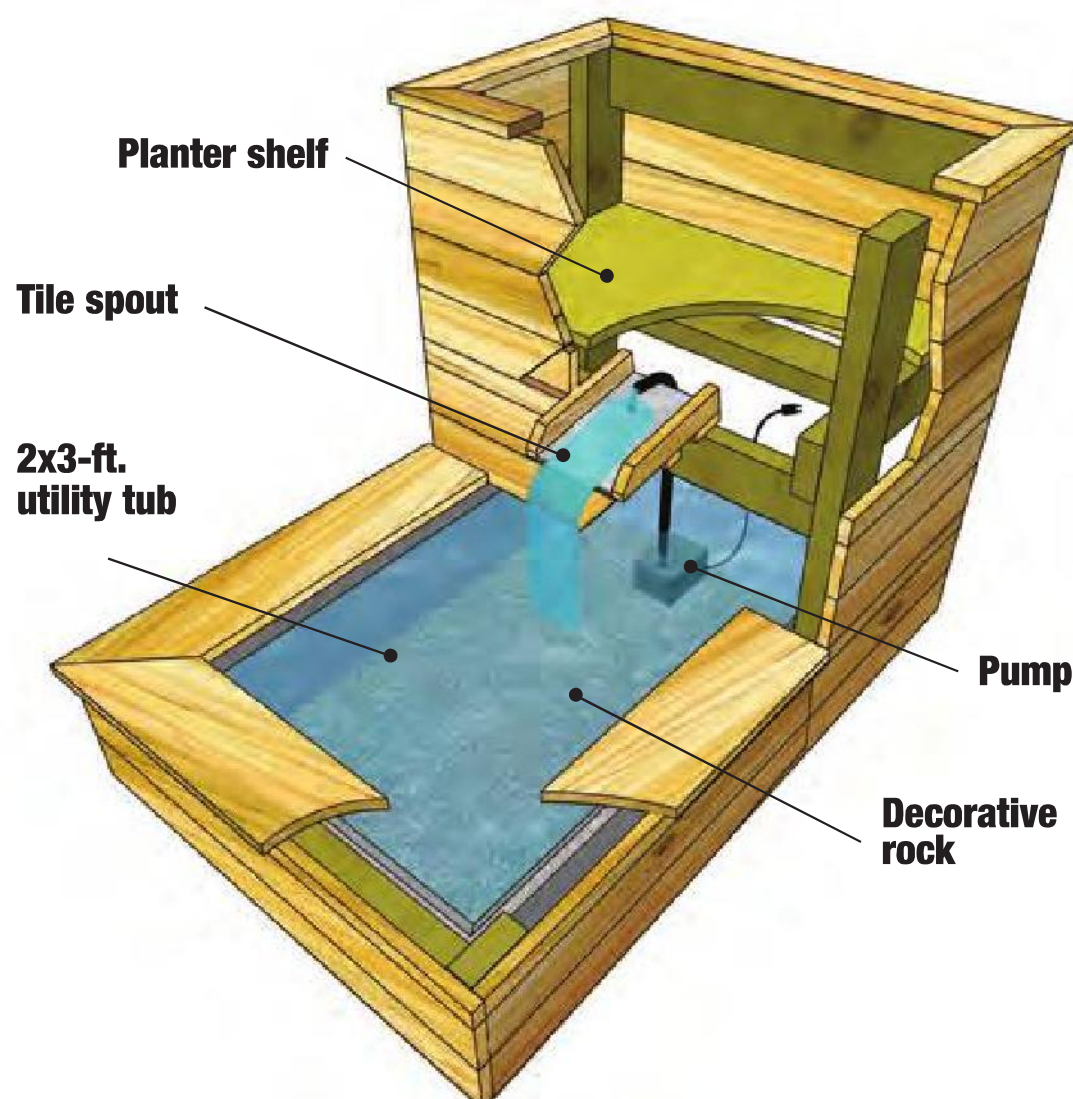
Secure the tile to the frame with silicone adhesive. Create a drip edge by applying a thick bead of silicone along the bottom front edge of the tile. This prevents the water from creeping back under the tile and helps the water to fall uniformly.

This freestanding fountain combines the benefits of a water feature and a planter to provide the perfect focal point for a deck, a patio or even a large balcony. You could also tuck it into a small garden and surround it with plants.

Building this fountain couldn't be much easier. All of the parts are dimensional lumber that are simply cut to length. There's no fancy joinery, and all of the parts are fastened with screws or brad nails.

The cedar-clad frame conceals an inexpensive 2 x 3-ft. utility tub (\$10 at most home centers) that acts as the reservoir. The spout is a 12 x 12-in. tile that is attached to a wood frame.

The completed fountain is relatively lightweight, making it easy to dismantle and relocate or transport for off-season storage.



Cast Fountain

Not all reservoirs must be hidden. A decorative ceramic pot with no holes in the bottom makes an attractive reservoir for a small fountain with a bamboo or copper spout. Or you can cast your own reservoir and spout from concrete, as we did in this design.

Making the forms is the trickiest part of this project. Any texture or blemish on the inside face of the form walls will be cast in the concrete. If you want the sides of your fountain to be smooth, you must use a smooth material such as melamine for the form walls and carefully smooth any joints with silicone.

Another option when casting your own fountain is to incorporate decorative objects such as shells, stones, tiles or glass into the form. Secure these objects to the side of the form with a very thin layer of silicone. After the concrete has cured and the form is removed, the objects will be flush with the surface of the concrete and you can polish them.

The spout and reservoir are cast separately in this design. A path is created for the water to travel up through the spout by embedding plastic tubing in the spout form.

CUTTING LIST

All parts 3/4-in. melamine

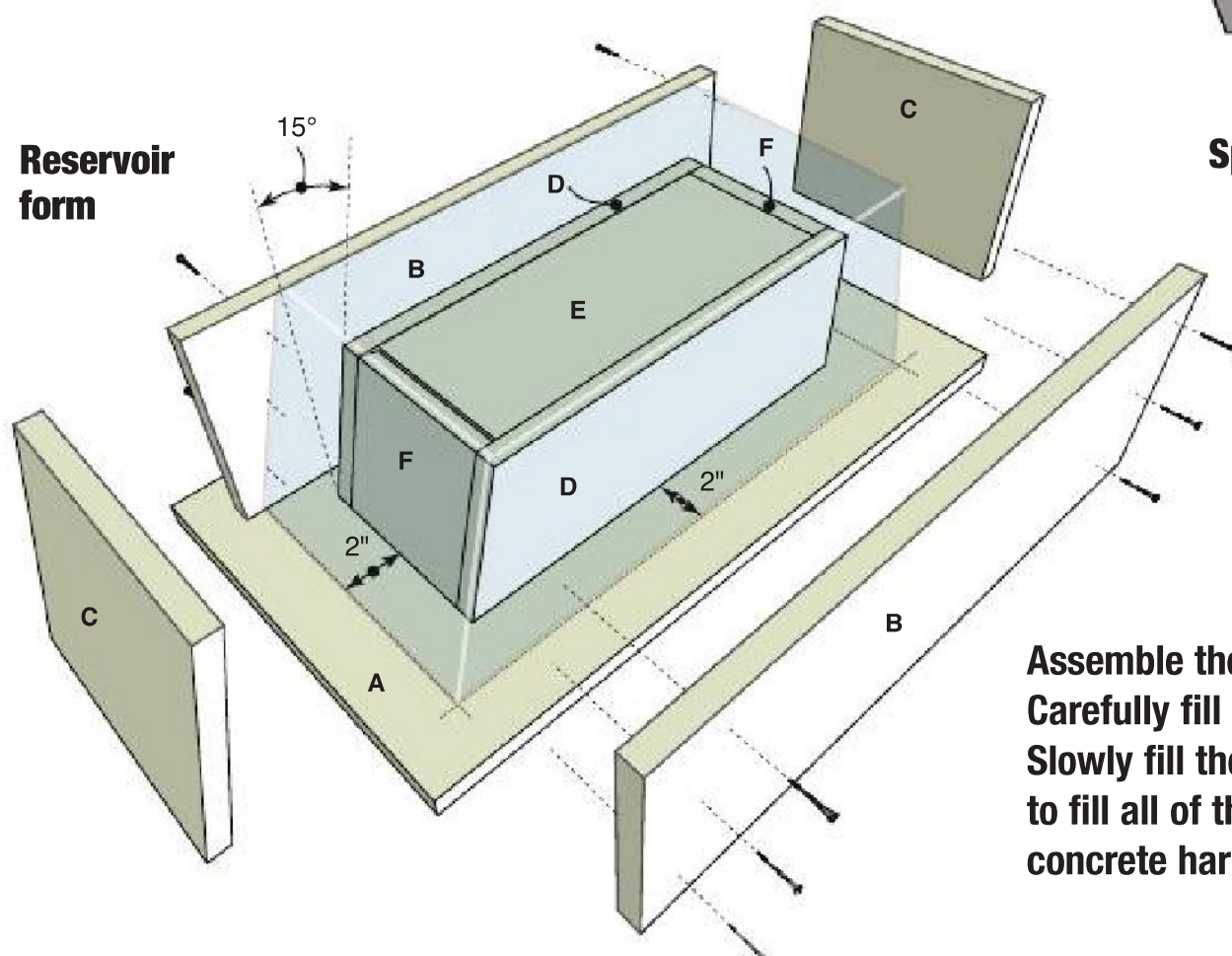
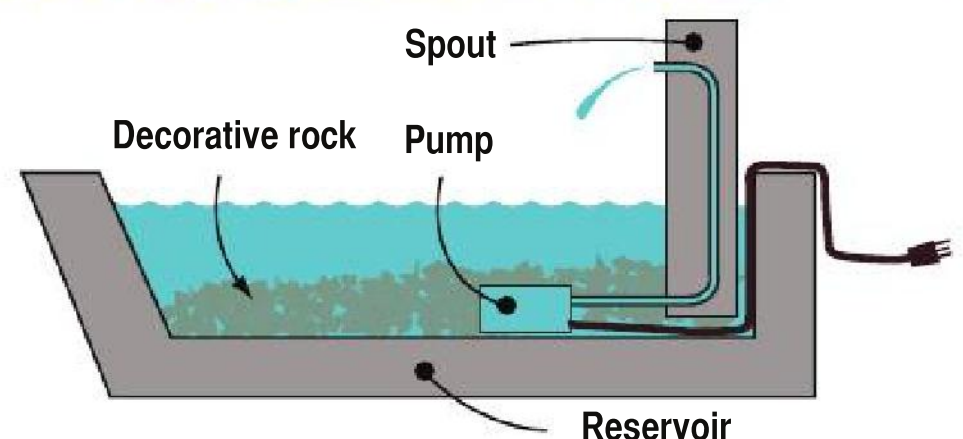
KEY NO. DESCRIPTION DIMENSIONS

Reservoir Form

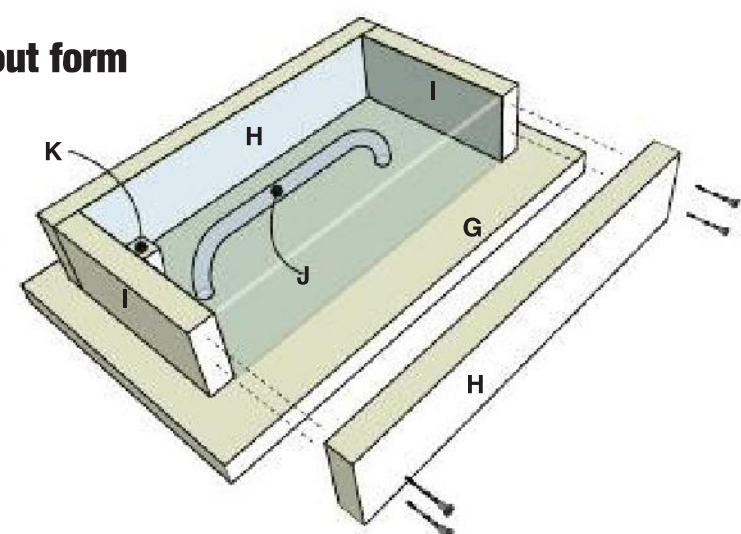
A	1	Reservoir form base	4 x 24 in.
B	2	Reservoir form sides	10 x 22 in.
C	2	Reservoir form ends	10 x 10 in.
D	2	Reservoir trough sides	6 x 14-1/2 in.
E	1	Reservoir trough bottom	4-1/2 x 14-1/2 in.
F	2	Reservoir trough ends	4-1/2 x 6 in.

Spout Form

G	1	Spout form base	18 x 6 in.
H	2	Spout form sides	2 x 16 in.
I	2	Form ends	2 x 4-1/2 in.
J	1	Recirculation tube	3/8 in. dia. x 18 in.
K	1	Power cord knockout	3/4 x 2 in.



Spout form



Assemble the melamine form walls with 1-1/4-in. screws. Carefully fill and smooth the joints with a bead of silicone. Slowly fill the forms with concrete, vibrating them periodically to fill all of the voids. Cover the form with plastic and let the concrete harden for five days before removing the mold.

Rock Fountain



Hiding the reservoir under your fountain creates the soothing effect of an underground spring — the sight and sound of running water without any visible pool. This type of fountain is often chosen for locations that call for a more subtle water feature that blends with the surrounding landscape.

You can design a hidden-reservoir fountain to fit just about any space. A small bubbling rock display will fit in a space as compact as 2 ft. square a 5-gallon bucket can serve as the reservoir. Or you can create a larger display and install a large manufactured underground reservoir.

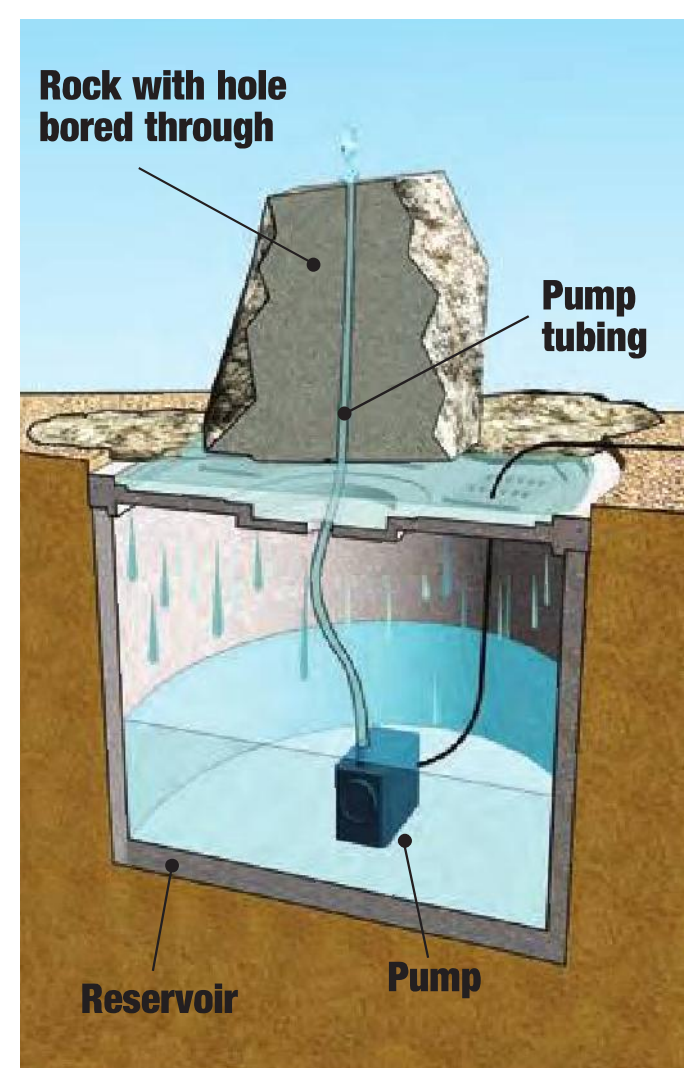
In this case a rock with a predrilled hole is used as the spout. You can purchase drilled rocks at some garden or landscape supply centers. Another option is to bore a hole yourself in any rock you choose. Use a hammer drill or an impact hammer and a masonry bit to bore through the rock. Choose a bit diameter that is slightly larger than the outside diameter of the pump tubing. ♦



Dig a hole for the reservoir. The top of the reservoir should be level with the ground. Place the reservoir inside the hole. Attach a piece of tubing to the pump that is long enough to run up through the rock.



Feed the tubing through the rock. Trim the excess tubing so that the end of the tubing is just below the surface of the rock. Cover the reservoir with a variety of rocks and gravel to create a natural appearance.





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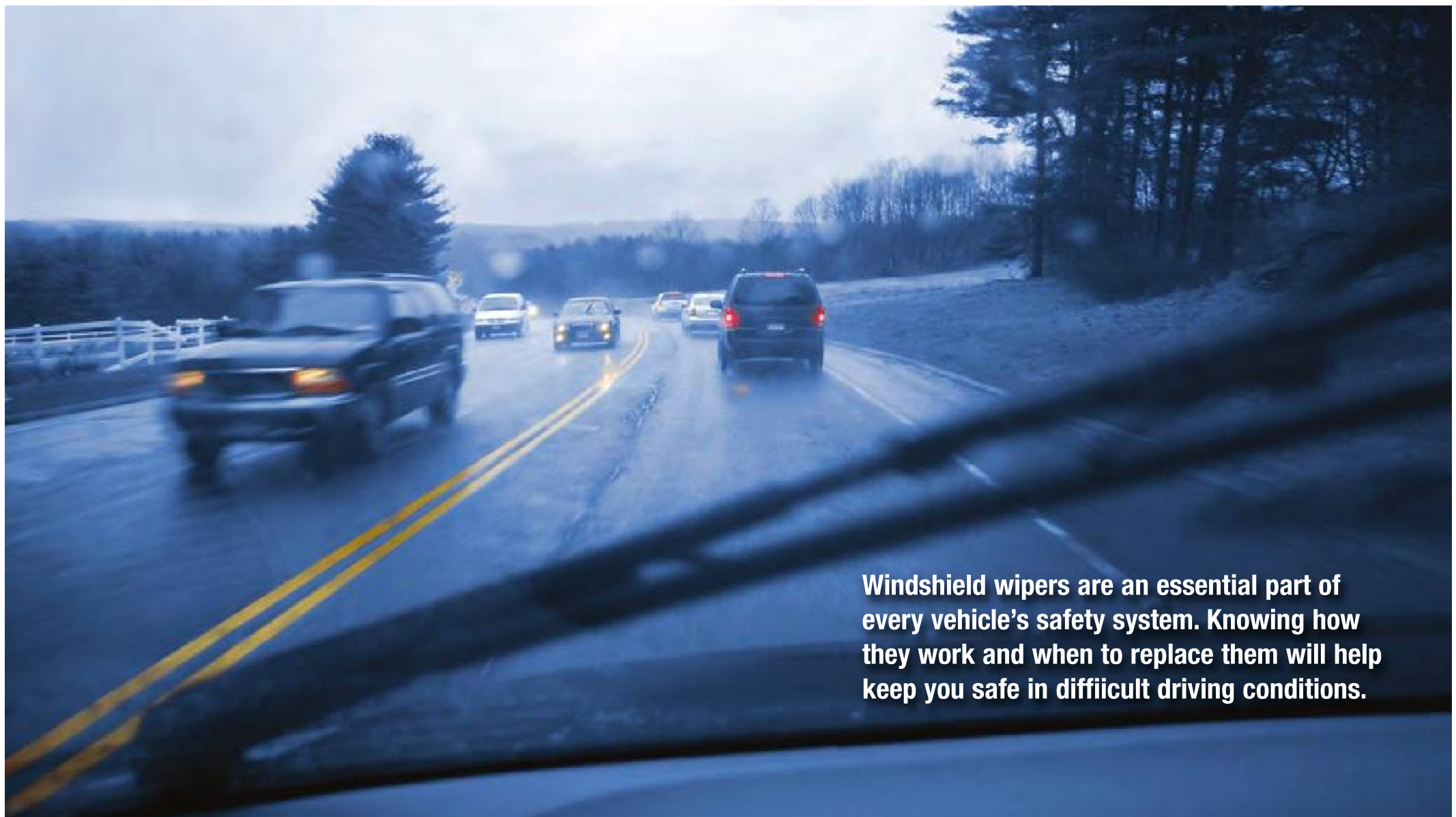
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Windshield Wipers

A clear view starts with a good pair

BY BOB GOULD



Windshield wipers are an essential part of every vehicle's safety system. Knowing how they work and when to replace them will help keep you safe in difficult driving conditions.

If you've ever attempted to drive

in a storm without functioning windshield wipers, you probably gained a new appreciation for how vital these automotive amenities are to safety. Though wipers have been in use for 100 years, the ones we're familiar with today have evolved considerably — in design, function and materials — from the early hand-powered versions. Here's a look at how far wipers have come and how you can help yours provide the best visibility in even the worst weather.

How wipers work

Windshield (or windscreen) wipers first appeared on automobiles in the early 1900s. Various devices were invented to allow them to operate via speedometer cables (which meant they didn't move when the car idled at stoplights) and vacuum-driven motors (which caused the action to vary with the speed of the car). Today's models are typically powered by an electric motor that drives a worm gear connected to a linkage system, and we take for granted the ability to operate them at a variety of speeds whether the vehicle is moving or not.

Wipers act as squeegees when the thin rubber blades move across the glass. On most automobiles, the blades are mounted on two tandem or opposed synchronized radial

arms. With the tandem system, one blade pivots from a point near the driver's side and the other blade pivots from near the middle of the windshield. This provides the best coverage for a two-wiper system. The less-common opposed system mounts the pivot points on opposite sides of the windshield, and the wipers meet in the middle.

Until relatively recently, wiper blades were mounted to a linkage system so each arm was supported in six or eight places to ensure even pressure across the windshield. This system worked well for many years because windshields were fairly flat, but modern windshields have become more highly curved, driving the development of new beam-style blades. Beam blades have an infinite number of pressure points and are engineered for even cleaning regardless of the curvature of the windshield. These blades are standard on many new vehicles.

Beam blades offer advantages in battling winter weather. When snow or ice forms on the arms of traditional wiper blades, it can result in uneven pressure and cause streaks on the windshield. As the snow builds up, wipers may become totally ineffective. Some companies make blades with a rubber covering or boot over the mechanism that is designed to prevent slush from freezing the joints. With beam blades, however, there are no exposed linkage joints,

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Beam wiper

Beam wipers are becoming increasingly common on new vehicles and provide better performance than standard wipers.

Standard wipers use springs to apply pressure to the squeegee and are more prone to leave streaks than newer beam wipers.



Standard wiper

so snow and ice buildup is less of a problem.

If you want the latest in technology (and money is no object), heated windshield wipers are an after-market option. Everblades heated wipers (see SOURCES ONLINE) have a 12-volt heating element inside the rubber squeegee. The manufacturer claims the wipers melt ice and snow to ensure good visibility during winter storms. A set of two heated silicone-rubber blades with heated frame and wiring harness retails for \$140.

Prolonging wiper life

Although manufacturers claim that natural-rubber blades should last for a million or more wipes, they do wear out. Dirt and debris create nicks and cuts in the rubber, and exposure to sun and ozone cause it to harden. If wipers go unused for long periods, the rubber edges can become warped, resulting in noise when they're finally needed. When you see streaks or hear noise, it's time to replace the wipers. Regardless of how much you spent on them, they should typically be replaced every six to 12 months.

However, there are products that claim to offer enhanced performance and longer life. For example, Trico teamed up with DuPont to create a

blade that incorporates a Teflon-resin wiping edge, which they claim dramatically reduces friction and enhances weatherproofing. Other manufacturers of silicone blades claim their products are resistant to UV rays and ozone, and some companies offer warranties for the lifetime of the vehicle. Silicone wipers supposedly leave a coating of silicone on the windshield each time they are used, which makes the glass slippery so the wipers wear less and are quieter. These blades are usually referred to as "silicone rubber," but the product is actually a rubberlike material and does not incorporate organic rubber.

Whatever type of wipers you choose, cleaning the windshield on a regular basis will help to prolong their life. Using washer fluid to clean the blade until all dirt is removed is also helpful. Because rear windows get dirty quickly, it's important to clean them often if a rear wiper is installed.

Another wiper-saving step is to apply a product such as Rain-X to the windshield every few months. Rain-X makes the glass slicker and reduces friction. In light rain at highway speeds, most of the water just blows off the windshield, and the wipers aren't needed.

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Replacing wipers

In general, replacing wipers is not a difficult task. You may need a screwdriver to loosen tabs or remove connectors, depending on the locking system used on your car. The new wipers' package will provide rudimentary installation instructions and may even offer a toll-free phone number if you need assistance. (Adapters are included to fit the wiper arms used on most cars manufactured after 1998.) If you need help, you can find an abundance of information on the Internet.

It's commonly recommended that you replace the complete wiper blade when the rubber is worn because the metal parts of the blade also experience wear and may even rust. However, to save money, some drivers prefer to replace only the rubber inserts. Inserts are available for some wipers, but not all. If you use inserts, it is important that the refill be an exact replacement by the same brand — substitutions can result in subpar performance. ♦

Club member Robert Gould is a former magazine editor and an auto enthusiast who lives in Stanley, Kansas.

SOURCES ONLINE

For online information, go to www.HandymanClub.com and click on WEB EXTRAS.

AC Delco, 800-223-3526

Anco, (248) 354-7700

Armorall

Bosch, 888-715-3616

Denso, 888-800-9629

Everblades, 800-746-0428

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Michelin, 866-499-0572

Peak, 800-323-5440

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Bring in the Light

A garden window can transform your kitchen into a bright, airy space

BY MIKE BERGER



A garden widow can help a kitchen look larger and brighter, increase ventilation and provide a great spot for growing houseplants.

With multiple panes

of glass and a wide, expansive view, a garden window is a great way to bring more light and a sense of spaciousness to your kitchen. In addition, its operable side panels can increase ventilation, and its large base and glass shelving provide the perfect spot to grow fresh herbs or flowers.

Except for its additional weight and larger size, a garden window can be as easy to install as a regular window — just be sure to have a few friends on hand to help with lifting. We worked with Simonton Windows on this project, but the basic installation steps are similar with any brand. However, it's essential that you follow any instructions supplied by the window manufacturer. The International Residential Code (R613.1) requires windows to be “installed and flashed according to manufacturers’ instructions,” so as long as you meet the specific requirements for your window, you’ll be well on your way not only to a successful installation, but to creating a space that’s filled with sunlight and greenery.



HANDY TIP

Before purchasing a window, first remove the interior trim and measure the width and height of not only the rough opening but also the casing of your current window. You’ll need to know these dimensions when placing your order.

PHOTOGRAPHY BY SCOTT JACOBSON

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Begin the process by taping over the panes of the old window to help secure the glass in case it breaks. Remove the window's casing trim and cut through any mounting screws or jamb nails — we used a multitool outfitted with a metal-cutting blade.



2
Remove as many of the window's components as possible to reduce its overall weight; then carefully pull the window from the framed opening.

HANDY TIP

Asphalt-based flashing tape can damage certain types of vinyl, so check the window's specs. Butyl tape is easier to work with, and although it initially isn't as tacky, its adhesive strength increases over time.



3
Apply window flashing tape to the sill, running the tape about 12 in. up each side. Use a putty knife or a small pry bar to tuck the flashing tape behind the siding (inset photo), being careful not to disturb the underlying house wrap (if present).



4

Have a friend help you lift the new window into the opening (inset photo; we removed a few soffit panels to gain better access to the framing). From inside, have a third person drill a countersunk hole (for the supplied mounting screws) on each side of the window 6 in. from the top. Make sure the unit is flush; then drive the mounting screws into the framing to secure the window.



5

Check that the window is both plumb and level, measure the diagonals to make sure that the unit is square, and shim where necessary. Drill two more countersunk holes in each side and three holes in both the top and bottom; then drive the remaining mounting screws into the framing (inset photo).

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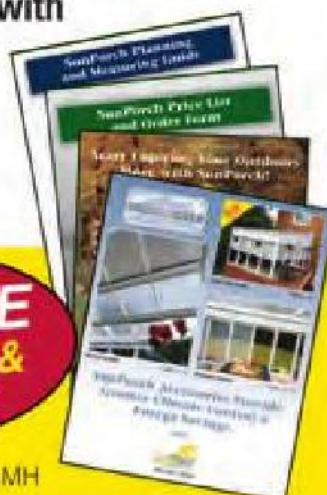
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To conceal the screwheads, first apply a small amount of glue to each of the 12 screw holes; then tap the supplied matching wood plugs into the holes.



If your window has mounting flanges, install flashing tape over the flanges and beyond both the top and bottom edges; then apply tape along the top, allowing it to run past the side tape by a couple of inches. Our unit did not have flanges, so instead we folded the tape 90 degrees and ran it along the seams where the window case met the revealed underlayment.



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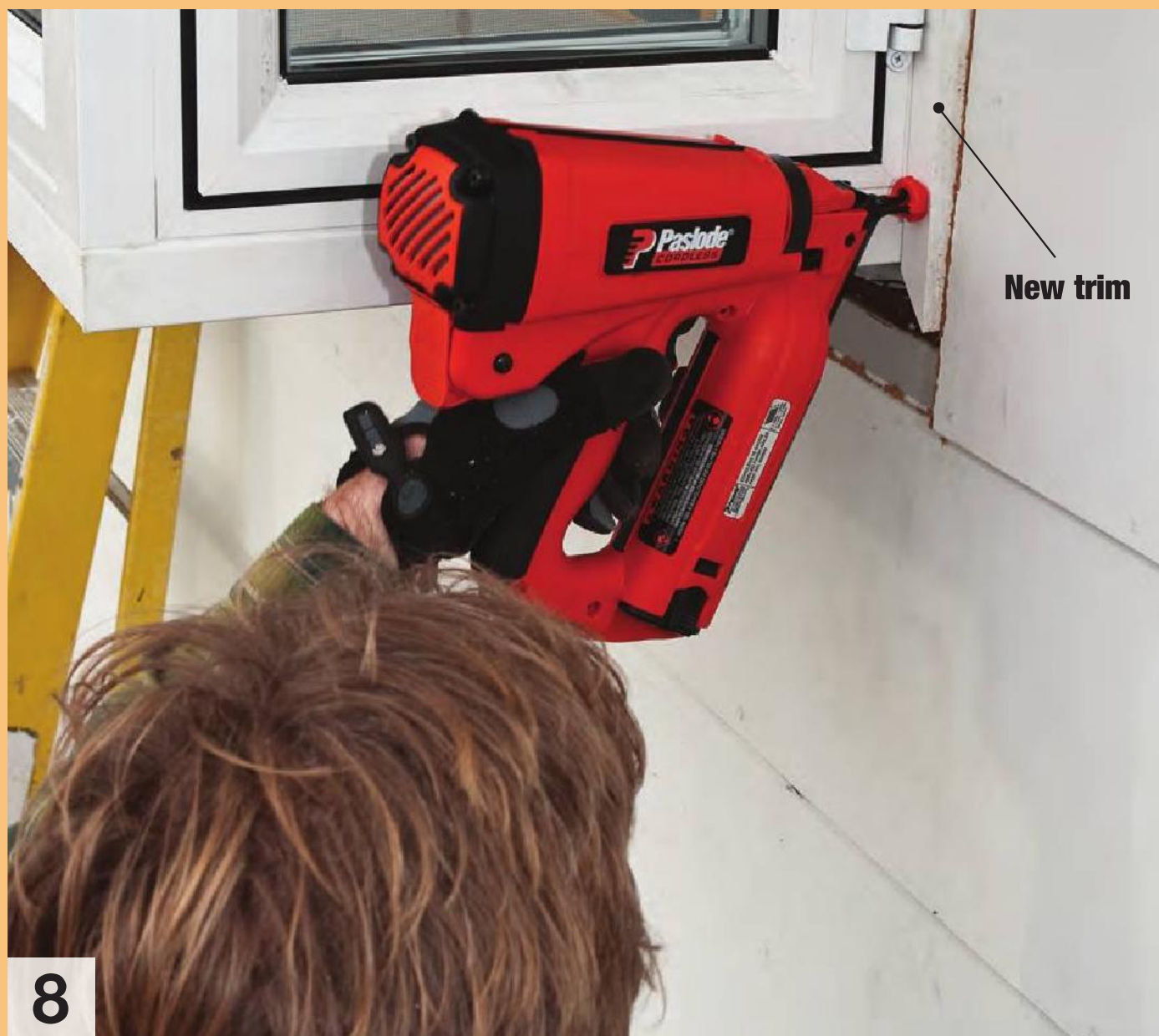
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From inside, spray low-expansion foam into any voids to completely seal the window. After you install the interior trim, all that's left is to stain or paint the woodwork and enjoy the natural light your garden window provides. ♦

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Expert Answers

BY STAFF



✓Yes



✓Yes



xNo



✓Yes



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To remove peeling popcorn, scrape off the loose texture with a putty knife. Use a spray bottle filled with warm water to dampen areas that are not loose; then wait 10 minutes and scrape off the softened texture.

Peeling Popcorn

Question: I started painting the textured ceiling in my living room, and as soon as I made the first roller pass, the texture began peeling off. What's going on, and how do I fix the damage? Can I even finish my paint job?

Todd Riball
Victoria, Minnesota

Answer: Ceiling texture — commonly known as “popcorn” — is notorious for peeling off during painting projects. Reasons range from improper application or cold temperatures during the original drying process to simple aging of the texture itself. During painting, the suction created when the wet roller moves across the ceiling can pull the popcorn off of the drywall. If this happens, stop painting immediately. Although it is possible to make a small spot-repair using one of the textured ceiling-patch products available at hardware stores or home centers, large peeling areas will require more drastic measures.

If the texture has come off in a large sheet, you will have to scrape the entire ceiling for a fresh start. Because in the past some popcorn-texture mixtures contained asbestos (even those applied as late as the mid-1980s), removal is a job best left to professionals. The old ceiling texture will need to be tested for the presence of asbestos and, if it tests

positive, abated and disposed of in an environmentally safe manner.

Once the old texture has been removed, you can choose whether to spray new popcorn texture, create a knock-down texture or skim-coat the ceiling for a clean, smooth surface. Prices vary greatly for this type of repair; new popcorn is the least expensive option. Provided it's applied correctly, new popcorn texture will last for many years to come.

Dread-free Window Washing

Question: I dread the thought of another spring window cleaning. The pros make it look easy. What's their secret?

Jay Weiser
Fountain Hills, AZ

Answer: In a word: *squeegee*. Most window-washing haters are doing it all wrong. Leave the spray cleaners and newspapers for cleaning your mirrors. It's all about the squeegee!

Don't be intimidated by the fancy swirling squeegee techniques you see the pros using. Those methods add efficiency, but they're not necessary to get great results. A basic top-to-bottom swipe method will leave you with sparkling windows in a fraction of the time you'd spend using up rolls of paper towels.

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MEMBER FORUM Expert Answers



A window scrubber, a window squeegee, a bucket and dish soap are all you need to clean windows like a pro.

home centers, including a 12-in. scrubber, a 12-in. squeegee, a bucket, a microfiber cloth and a razor scraper. Make sure you get a good-quality squeegee that is designed to clean windows.

The process is simple and can be used inside and outside:

- Mix about 1 tablespoon of dish soap with a couple of gallons of cool water.

Dip the scrubber in the solution and wring it out.

- Scrub the window. Use a razor blade to remove stubborn spots, such as dried bugs.

- Tilt the squeegee slightly and wipe across only the top 1 to 2 in. of the window; then wipe that strip with a dry microfiber cloth. This creates a dry edge.

- Wipe the squeegee blade with a towel. Then place the squeegee on the dry edge area in the top left corner of the window and pull down along the left edge of the window. Use even pressure, and do not lift the squeegee until you get to the bottom.

- Wipe the squeegee with a towel. Make additional passes down the window, overlapping the previous pass by a couple of inches, until you reach the right edge of the window.

- Finally, use the microfiber cloth to wipe around the edges of the window and over any wet streaks.

You can try other patterns, such as

swiping across the window in overlapping passes from top to bottom. The key is to first create a dry edge where you will start each pass and to use even pressure and not lift the squeegee until you finish each pass.

A crystal-clear, freshly washed window is a thing of beauty. Don't let your dread of washing windows keep you (and those you live with) from that sweet satisfaction. ♦

QUIZ ANSWERS 1) p. 15, 2) p. 30, 3) p. 46, 4) p. 48, 5) p. 35

NEED FAST ANSWERS?

One of the fastest and best ways to get answers to just about any DIY question is to post it in the Member Forum area on the Club Web site.

The forum taps into the extensive knowledge and experience of your fellow Club members. Chances are you'll have answers within hours of posting your question. And best of all, it costs nothing for Club members to post questions or join in the discussions. Check it out at www.Handy10.com.

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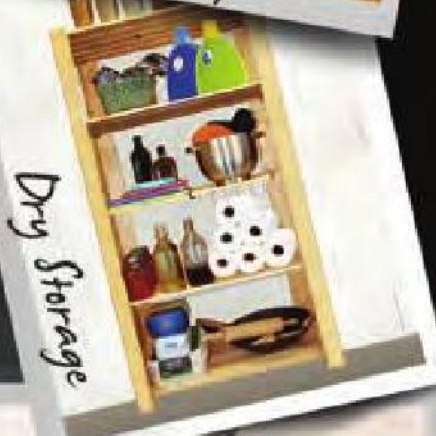
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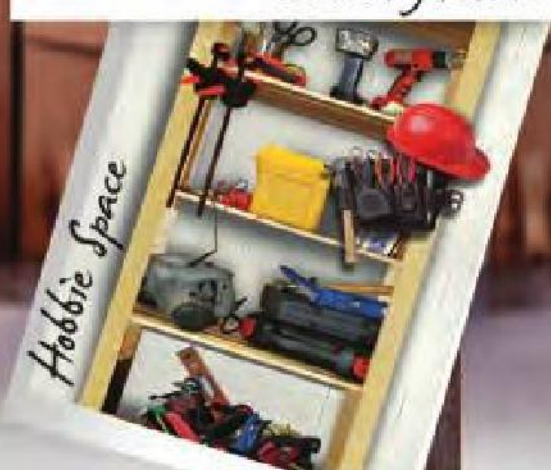
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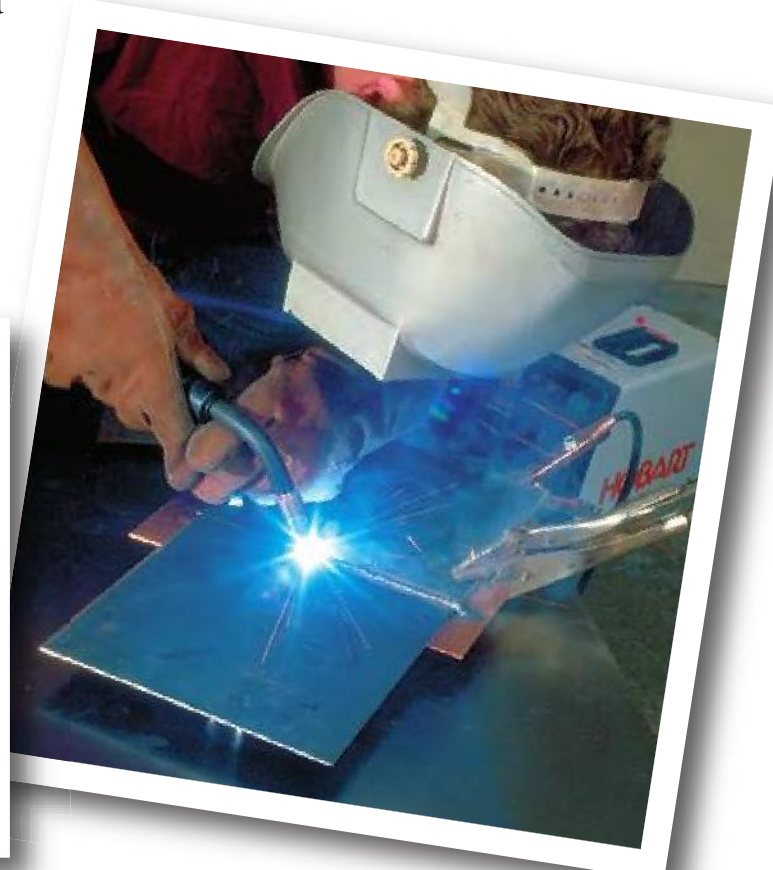
Alligator clip

Holding Helper

If you have arthritis in your hands or simply find it difficult to hold small nails or other tiny parts for your projects, use this trick from Club member **Al Kagarice** of Urich, Missouri: Fasten alligator clips to various lengths of dowel rods and use them to hold nails in place while you drive them home.

Perfect Welds

To create clean, perfect weld beads with a wire-feed welder, try this tip from Club member **Ken Berkey** of West Newton, Pennsylvania. Clamp a small section of copper stock at each end of the intended joint. When you're ready to start welding, begin the weld bead on the copper, working your way toward the actual metal workpieces. Continue the weld past the workpiece, running back onto the copper, all the while maintaining a smooth, steady movement. Ken says copper is ideal for this purpose because it draws heat away from the welding wire, and the bead of molten metal won't stick to it. ♦



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The member who submits the best tip wins \$200. Other published tips are awarded \$50. Submit your tips by e-mail to: tiptrader@HandymanClub.com

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Your vote will help decide who wins this month;
next time, enter a project of your own BY JENNY STANLEY



Prized porch

To create this backyard porch, Club member **Earl Howell** of Greene, New York, first built up the foundation using fieldstones; then he added a retaining-wall edge and topped the surface with concrete pavers. Decorative posts support the roof, and bead board and moldings add character to the ceiling.



Petite pied-à-terre

After seeing a similar project on TV, Club member **David Didion** of Garrett, Indiana, was inspired to create this teardrop-style camper. He assembled the trailer frame and topped it with an insulated cabin; then he added cabinetry, a countertop and a small sleeping area inside. The camper even features AC and DC electricity. The best part, however, is the hinged wall that opens up to the great outdoors.



Tyke bike

Club member **Tom Lewis** of Pueblo West, Colorado, started from scratch when he built this motorcycle-inspired rocker for his grandchildren. He sketched the design on poster board and enlarged it to create a pattern for the parts, which he cut from cabinet-grade plywood and assembled using wood glue and brad nails. Tom hand painted the rocker and then added a coat of polyurethane.



Grand game table

In creating this intricate game table, Club member **Elwood Schmutz** of Napa, California, demonstrated not only his talent for woodworking but also his clever use of workshop scraps. The tabletop includes a walnut-and-maple checkerboard in the center surrounded by more than 600 pieces of 11 different woods, all pieced together to create the variegated surface. ♦



CRITICS' CHOICE AWARD

Winner: Dana Lambert of Port St. Lucie, Florida

Project: "Practical Pad," February/March 2010

Prize: Dana will receive an official certificate and the SquidBrite and BarFlex work lights from Stanley. Congratulations, Dana!



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Vote online for one of these projects to receive the Critics' Choice Award.

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Prized porch

Petite pied-à-terre

Tyke bike

Grand game table

Voting for this issue will end July 31, 2010. The winner will be announced in the October/November 2010 issue.

PHOTOGRAPHY COURTESY MEMBERS

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For a list of February/March prizewinners, see p. 2

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BY ROSS TANNER, PRODUCT TEST EDITOR

Electric Pressure Washer

MEMBER RATING: 8.8 BEST FEATURE: VERSATILITY

HOMELITE CONSUMER PRODUCTS, 800-242-4672, WWW.HOMELITE.COM

The Homelite EZ Clean Electric Pressure Washer (\$159, model HL80215) takes the hassle and guesswork out of cleaning large surfaces. Its 13-in. washer deck features dual-action nozzles that rotate at 1,500 RPM while rolling smoothly over the work surface. It cleans evenly without overspray in less time than it would take to use a standard spray wand. The unit also features a standard spray wand for cleaning in tight spaces.

Steven Kirkpatrick, Englewood, FL: "The wide cleaning deck on the Homelite EZ Clean Pressure Washer makes short work of cleaning driveways, sidewalks and decks."

Ernesto Cabrera, Miami, FL: "It's the best household pressure washer I've ever tried. It is quiet, leaves no uneven streaks, packs a lot of power and is reasonably priced."



Rotary Tool

MEMBER RATING: 9.5 BEST FEATURE: PERFORMANCE

DREMEL, 800-437-3635, WWW.DREMEL.COM

Dremel's new 4000 Rotary Tool 5/36H Kit (\$100) features a variable-speed range of 5,000 to 35,000 RPM and is compatible with all Dremel accessories and attachments. Its sleek design offers a 360-degree grip zone, and the on/off switch and speed dial are strategically placed so that they don't interfere with the grip. The 5/36H kit comes with five attachments and 36 accessories to help you carve, engrave, rout, grind, sand, cut, clean, polish and more.

Kevin Bartlett, Mesquite, TX: "The Dremel 4000 is an excellent tool for DIYers because it's so versatile. It can be used for sanding, cutting, detailing, sharpening and more."

Leslie Pfeiler, Lexington, KY: "Dremel has always made high-quality products, and the Dremel 4000 is no exception. The accessories are well-designed and easy to use."



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Battery-Powered Trimmer and Edger

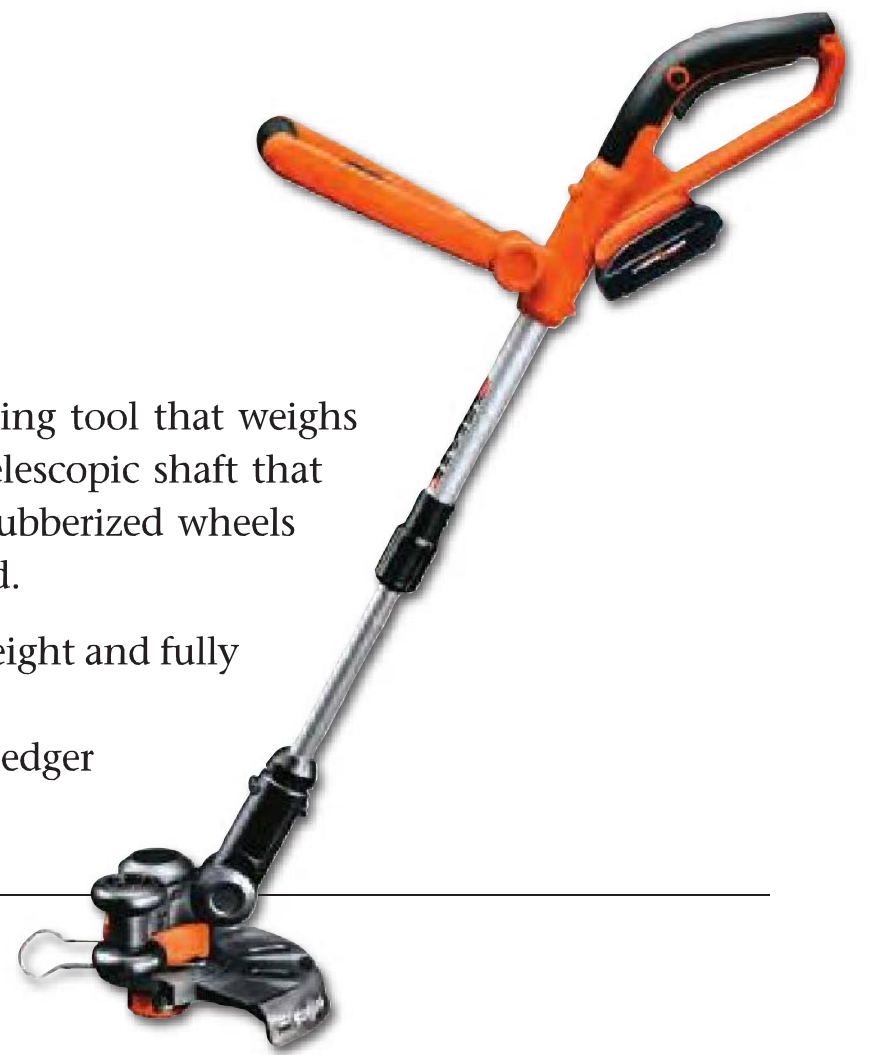
MEMBER RATING: 8.5 BEST FEATURE: EASE OF USE

WORX YARD TOOLS, 866-354-WORX, WWW.WORXYARDTOOLS.COM

The Worx Lithium GT Trimmer & Edger (\$149) is a LiON-powered landscaping tool that weighs only five pounds. It easily converts from a trimmer to an edger and has a telescopic shaft that adjusts to your height and posture. The adjustable handle, along with the rubberized wheels and spacer guard, make yard work easier. A 30-minute charger is also included.

Kevin Barnett, Troutman, NC: "The Worx Lithium GT Trimmer & Edger is lightweight and fully adjustable and made my weekly trimming and edging tasks a breeze."

Kurt Abel, North Charleston, SC: "This is a great battery-powered trimmer and edger that packs a ton of power!"



Pack of Lubricants

MEMBER RATING: 9.4 BEST FEATURE: VERSATILITY

RADIATOR SPECIALTY CO., 866-WRENCH7, WWW.LIQUIDWRENCH.COM

The Liquid Wrench Six-Pack (\$20) provides a variety of lubricants for different purposes. The kit's Lubricating Oil stops squeaks, loosens sticking parts and prevents rust. Penetrating Oil frees stuck nuts, bolts and locks by dissolving rust and cutting through grease. Silicone Spray provides a slick coat of protection that repels water and inhibits rust. Dry Lubricant dries fast to prevent dirt and dust collection with no oily residue. Chain Lube stays on moving parts to reduce friction. And White Lithium Grease provides a thick coating for long-lasting lubrication.

Joseph Mullarkey, Amsterdam, NY: "The Liquid Wrench Six-Pack solved many problems around my home. I gave away my other multipurpose lubricants and will use Liquid Wrench from now on."

Cary Myers, Petersburg, MI: "Each lubricant has specific uses — the possibilities are endless."



Roller Cover

MEMBER RATING: 8.6 BEST FEATURE: QUALITY

PURDY PROFESSIONAL PAINTING TOOLS, 800-547-0780, WWW.PURDYCORP.COM

Safe for use with all latex- and oil-base paints and stains, the Purdy White Dove roller cover (\$5) incorporates a high-density woven cover to create a smooth, lint-free finish. It also holds a large amount of paint, which helps to improve efficiency and productivity.

Michael Vannoy, Kennewick, WA: "The Purdy White Dove roller cover out-performed every roller I have used in the past. It spreads paint evenly and is easy to clean."

Jim Christie, Denton, TX: "It didn't leave any lint behind during use or after cleaning. The finish came out perfect on all of the surfaces I painted."

Rain-Style Showerhead

MEMBER RATING: 8.2 BEST FEATURE: QUALITY

ETL, (775) 398-7680, WWW.OXYGENICS.COM

Available in chrome and brushed-nickel finishes, the Oxygenics Storm Showerhead with 9-in. adjustable shower arm (\$39.99, available at Bed Bath & Beyond) has 54 nozzles that deliver 30 percent more water pressure than other rain-style showerheads. It injects air into the water stream, which increases the velocity of the water and helps to conserve water and energy. The showerhead comes with a lifetime performance warranty against clogging.

Michael Peppler, Oak Lawn, IL: "The Oxygenics Storm showerhead provides an even flow, and the large spray pattern makes for a relaxing shower."

Wilbur Kirby, Parkersburg, WV: "It is a high-quality showerhead that looks beautiful and delivers a strong flow of water."





Wall Anchors

MEMBER RATING: 8.7 BEST FEATURE: EASE OF USE & INSTALLATION

ITW BRANDS, 877-489-2726, WWW.E-ZANCHORS.COM

E-Z Ancors are self-drilling wall anchors that require only a screwdriver to install. The Twist-N-Lock (\$1.75 for a pack of four) splits and grips inside drywall, allowing you to hang up to 75 pounds. The Stud Solver (\$1.75 for a pack of four) can be installed anywhere on a wall, even in a stud. The Hollow Door Anchor (\$1.75 for a pack of four) has a special collar design that holds tight in thin plywood door skins and can also be used in drywall.

Richard Mauriello, River Edge, NJ: “The E-Z Ancors were easy to install without drilling. They work well for jobs such as hanging shelves, mirrors and paintings.”

Cary Tunebergh, Pocatello, ID: “The E-Z Ancors screwed right into my plaster walls and are holding nicely.”

Multipurpose Grease

MEMBER RATING: 9.0 BEST FEATURE: QUALITY

VAN PATTEN INDUSTRIES, 877-464-4248, WWW.THEINHIBITOR.COM

The Inhibitor Ultra Premium V80 VCI Grease (\$15.99) provides long-lasting lubrication as well as protection from rust and deterioration. It is safe to use on bearings, hand and power tools, lawn and garden equipment, hinges, locks and moving metal parts. It also comes in a 6cc Syringe (\$6.99) that is ideal for reaching into cracks and crevices.

Debbie Henderson, Mulberry, FL: “I used the V80 VCI grease on industrial chains that come in contact with water. After two weeks they are still moving freely with no sign of corrosion.”

Marvin Olson, Shalimar, FL: “I live in a high-humidity area, and this grease is an excellent lubricant that offers great protection against rust.”



Paintbrush Storage

MEMBER RATING: 8.0 BEST FEATURE: CONVENIENCE

PRAZI USA, 800-262-0211, WWW.PRAZIUSA.COM

The Prazi Eco Paint Brush Storage Lid (\$7.95) fits any 1-gallon paint can and can accommodate any size paintbrush. Simply place the brush handle through the top of the lid and secure it to the paint can. The lid keeps the paint and brush fresh during a short break or even overnight, saving you from having to clean up until the painting project is complete.

Dick Swanson, Burnsville, MN: “I used the Prazi Eco Paint Brush Storage Lid when painting three bedrooms in three days. Neither the brush nor the paint dried out, and I saved a lot of cleanup time.”

Alvin Modesitt, Cory, IN: “It keeps my brush as fresh the next day as it was when I quit the day before. I can now start and stop without wasting time washing out my brush.”

Drywall Tape Machine

MEMBER RATING: 8.1 BEST FEATURE: DURABILITY

BUDDY TOOLS LLC, 888-887-7985, WWW.TAPEBUDDY.NET

Made of heavy-duty plastic, the TapeBuddy Drywall Tape Machine (\$35) conveniently applies an appropriate amount of drywall compound directly to the tape, allowing you complete drywall taping faster. The easy-to-clean dispenser offers two choices for mud thickness and can hold 500 ft. of tape.

Lowell Kuhn, Independence, MO: “The TapeBuddy worked really well and is easy to use. It coats the tape with a uniform layer of mud.”

Robert McDonald, Seville, OH: “It makes the sloppy part of mudding tape manageable. Most important, it gave me professional results every time.”





Drywall Corner

MEMBER RATING: 8.6 BEST FEATURE: FINISHED LOOK

GRABBER CONSTRUCTION PRODUCTS, 800-477-TURN, WWW.GRABBERMAN.COM

Hydrotrim corner adhesive (30 cents a foot) features a water-activated formula and punch holes that allow joint compound to easily bond drywall corners with superior strength. It can be adjusted during installation while it's wet, and it dries completely within 10 minutes. The result is an easy-to-apply corner that does not blister, bubble, dent or crack.

Joe Serrano, Hamilton, NY: "Hydrotrim is far superior to metal corner beads. It is thin and flexible and will not become deformed if bent, and the tapered edges make it easy to feather the mud."

Ben Stone, Howe, IN: "It is a durable product that goes up fast and makes a perfect corner every time."

Folding Knife

MEMBER RATING: 8.4

BEST FEATURE: PERFORMANCE

COLUMBIA RIVER KNIFE & TOOL, 800-891-3100, WWW.CRKT.COM

The McGinnis Tuition Knife (\$49.99, model 1161) is a compact and powerful work knife that has a broad 2.88-in. sheep's-foot blade for fast cutting, accurate trimming and excellent tip strength. One-hand opening is easy using the friction-grooved flipper, which also acts as a blade guard when open. Other features include a deep finger choil, thumb friction grooves and a removable stainless-steel pocket clip.

Dave Cherry, Bristow, VA: "The McGinnis Tuition knife is my new favorite pocket knife because it has nice styling, opens easily, locks securely and feels comfortable in my hand."

Dean Fidler, Monroe Center, IL: "It is an excellent knife that is durable and well-balanced and even stayed sharp after I used it to cut vinyl flooring, carpet, rubber and more."



Drill Attachment

MEMBER RATING: 8.6 BEST FEATURE: PERFORMANCE

MILESCRAFT INC., (847) 683-9200, WWW.MILESCRAFT.COM

Drill90 (\$19.99) features a steel drive for long-lasting durability and is the perfect accessory to help you drill holes and drive screws in places that are otherwise impossible to reach. Simply attach the ergonomic handle to either side of your drill, find your bit of choice and then secure the 3/8-in. input shaft into your drill chuck.

Donald McClintock, Schuylkill Haven, PA: "Drill90 makes drilling in tight areas a snap. Best of all, its direct-drive system doesn't give up any speed or torque."

Harold Charboneau, Placentia, CA: "I have a similar 90-degree drill attachment, but the keyed chuck, screw-in support handle, metal gears and strength of the Drill90 make it a superior tool."

Nonslip Rug Strip

MEMBER RATING: 8.4 BEST FEATURE: EASE OF USE

ROBERTS CONSOLIDATED INDUSTRIES INC., 800-777-8665, WWW.ROBERTSCONSOLIDATED.COM

RhinoGrip Non-Slip Rug Strip (\$9.48) is designed to hold rugs and mats in place. One side of the 2-1/2-in. x 25-ft. roll attaches permanently to the rug, and the other side features a rubber surface that prevents rugs and mats from slipping, even when they're repositioned.

George Donner, Mifflinburg, PA: "The RhinoGrip Non-Slip Rug Strip worked well on my entry rug and outdoor deck mat. It was also effective in holding drawer liners in my toolbox."

Eric Scott, Evansville, IN: "The adhesive sticks to many different types of rugs, and the packaging makes it easy to measure the correct length without any waste." ♦



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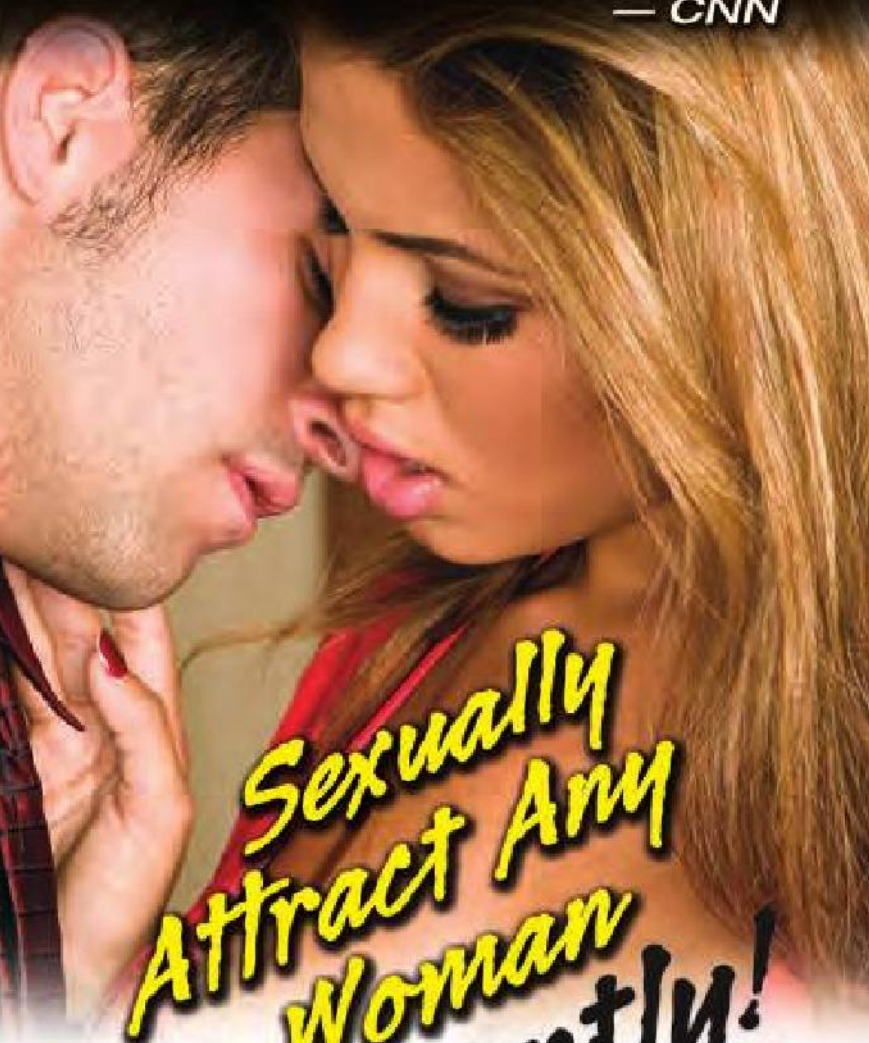
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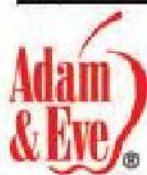
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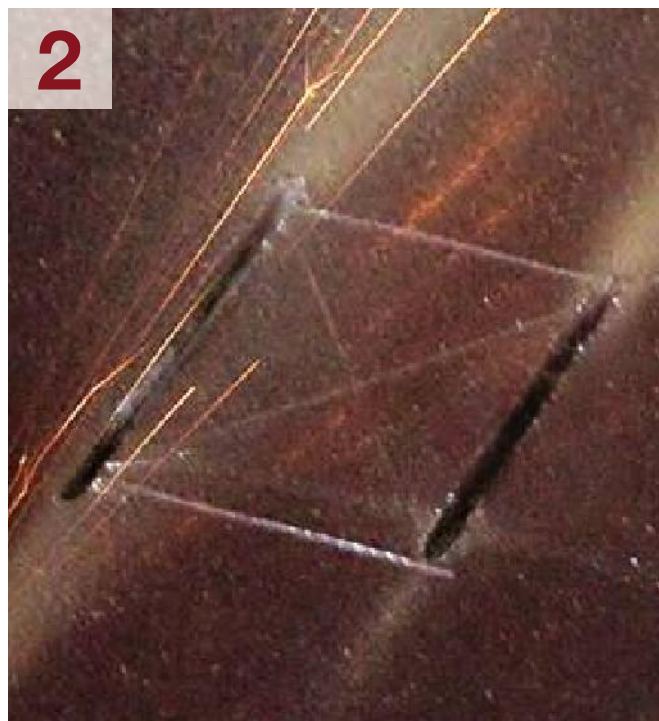
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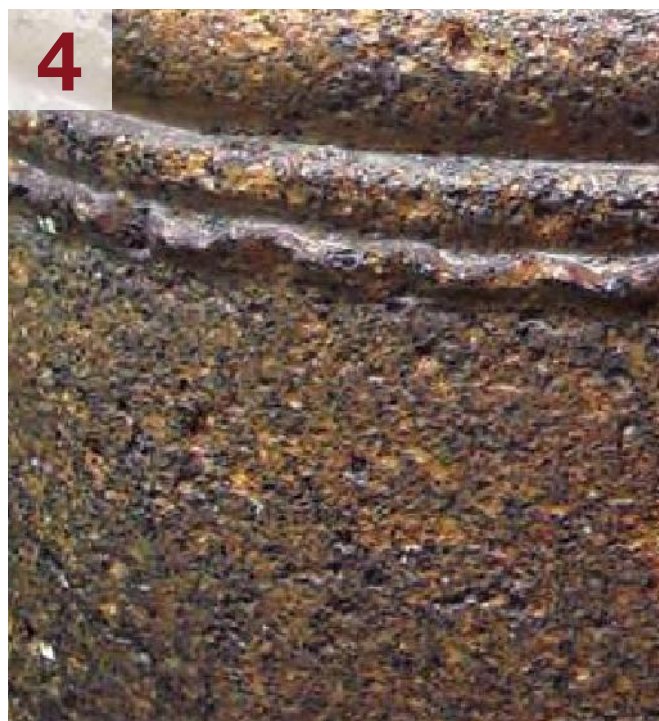
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Melissa Hardberger, Portland, TX
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Stanley Kitzelman, Ambler, PA
Dan Mallwitz, Pahrump, NV
Barbara Moore, Hendersonville, NC
Myra Robert, Newton, IL
Lowell Stump, Flagstaff, AZ

The answers to this issue's QUIZ appear at the
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Epilog Laser, Make your projects profitable with a laser engraving system from Epilog! Engrave and cut intricate patterns into several materials with the touch of a button. www.epiloglaser.com, 888-437-4564. See p. 82. **Check 9**

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KILZ, Professionals know to ensure the best finish, you need a well-prepared surface. Let KILZ Primers help you get the results you want with your project. www.KILZ.com, 866-PRIMER. See p. 20. **Check 18**

Kreg Tool, Thanks to a tool called the Kreg Jig®, just about anyone can build quality wood projects in their spare time. The Kreg Jig® makes wood joinery fast, easy and fun. www.kregtool.com, 800-447-8638. See p. 14. **Check 19**

Lam-Hammer, Throw away your pull bar! The Lam-Hammer provides quicker, easier, damage-free installation of interlocking laminate and engineered floors in tight places. www.lam-hammer.com, 888-687-2421. **Check 20**

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Lumber Liquidators, With over 180 locations, Lumber Liquidators is the nation's largest independent retailer of hardwood flooring. Lumber Liquidators...Hardwood Flooring for Less! www.lumberliquidators.com, 800-Hardwood. See p. 41. **Check 22**

Mechanix Wear is the leader in high-performance work gloves, engineered to help you work faster, safer and cleaner. Mechanix Gloves. The Tool That Fits Like A Glove®. www.mechanixwear.com, 800-222-4296. See p. 59. **Check 23**

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Moduline Cabinets, Moduline all-aluminum tool and storage cabinets for home and garage. "Organize with Style" and turn your workshop and garage into a professional work area. www.modulinecabinets.com, 888-343-4463. **Check 25**

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Osborne Wood Products, Offering decorative table legs, corbels, molding and more. Though we offer a vast collection of stock items, we are also happy to quote custom pieces. www.osbornewood.com, 800-849-8876. **Check 28**

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STIHL, To learn more about STIHL visit stihlusa.com, 800-GO STIHL (800-467-8445). See p. 53. **Check 35**

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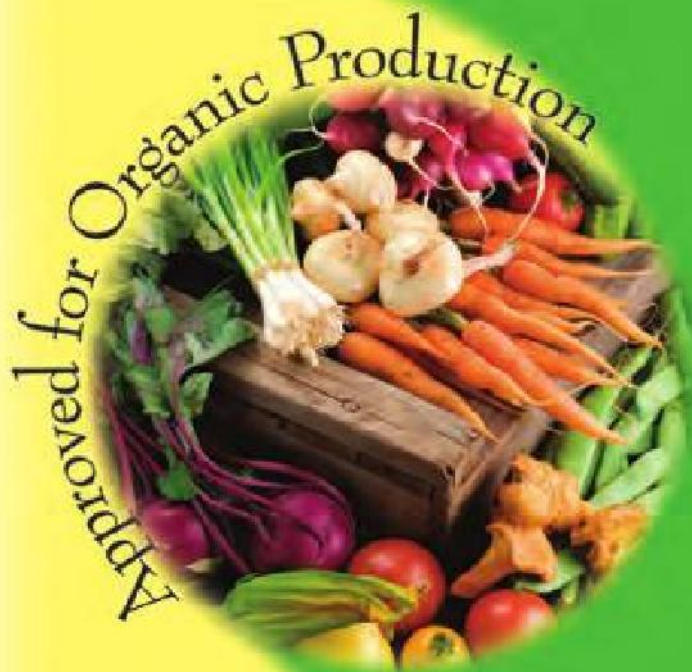
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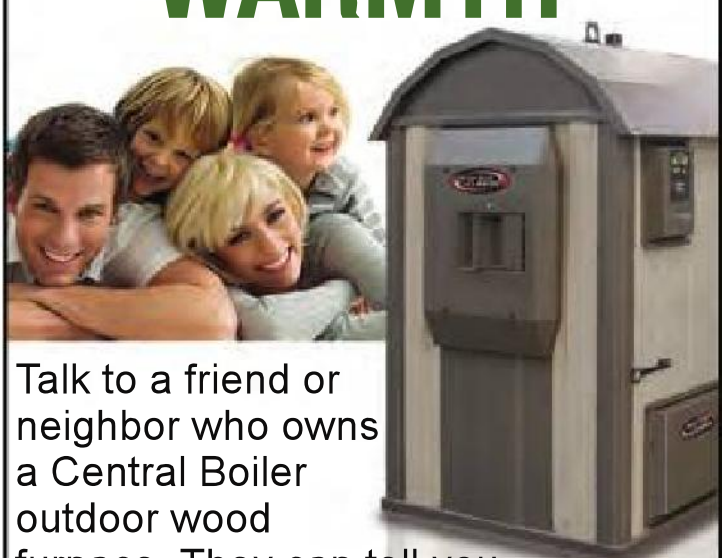


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HP010

New 50 State \$2 bill Program™ now underway

Restricted release gives just 1 out of every 1,291 households an opportunity to get the entire State \$2 Bill Collection™



NEVER BEFORE SEEN: This is the new New York state overlaid \$2 bill that few have ever seen and everyone is scrambling to get. The World Reserve Monetary Exchange has restricted the release of its exclusive State \$2 Bill Collection™, so getting one would make you as happy as hitting the lottery.

By Joan Tedeschi
Universal Media Syndicate

Most Americans have never even seen a government issued \$2 bill, let alone the new never before seen state \$2 bills being overlaid and released exclusively by the World Reserve

Monetary Exchange.

According to Thomas C. Harris, former Deputy Director of the U.S. Bureau of Engraving and Printing and consultant for the privately held World Reserve, "Less than 1% of all U.S. Government notes currently

produced are \$2 bills."

And finding one of the exclusive 50 state \$2 bills will be even more difficult. That's because it has just been announced that the release of the entire new State \$2 Bill Collection™ has been restricted. That means only 1 out of

every 1,291 U.S. households will even have a chance to get them all.

With this new State \$2 Bill Collection™ now underway, U.S. residents are expected to snatch up all they can while they can still get their hands on them. ■

Just 7 days left for U.S. residents to get the only existing state \$2 bills

Private hoard of never before seen state \$2 bills being released for the next 7 days, only in 4 packs of protective estate wallets each loaded with its own state \$2 bill for just \$12 per wallet

By R.K. Berry
Universal Media Syndicate

UMS - It's like a run on the banks. The phones just keep ringing off the hook.

That's because U.S. residents can only get the World Reserve's never before seen state overlaid \$2 bills for the next 7 days.

All residents have to do is call 1-888-485-8214 or one of the five Overflow Hotlines to get their new state bills.

These special Toll Free Hotlines have been set up because you can't get these exclusive bills at local banks, credit unions or even the Federal Reserve. They're

being banded in packs of four and released directly to U.S. residents exclusively by the World Reserve.

These crisp U.S. \$2 bills featuring the exclusively designed state overlaid printing are so precious you would never even dream of carrying them around in an ordinary leather wallet.

That's why they are being released in individually loaded rich protective estate wallets. They are so impressive, everyone will swear they must have been taken right from the President's desk.

"Everything in our vault may soon be gone. So residents

who want to get them now had better hurry and call," said Jefferson Marshall, Executive Director of the World Reserve Monetary Exchange.

Some collectors are always trying to snatch up all the \$2 bills issued by the Government they can get their hands on. They know that \$2 bills are almost impossible to find in your pocket change these days.

Originally issued in 1928, the currently designed \$2 bills have largely been locked away in the bowels of the U.S. Federal Reserve vaults, rarely distributed by banks and almost never seen

in circulation.

The \$2 bills issued by the Treasury Department's Bureau of Engraving and Printing, makers of all of the nation's paper currency, make up less than 1% of the \$670 billion in genuine U.S. currency that circulates worldwide, according to the U.S. Department of Treasury.

"That's why I've authorized a limited number of genuine Government issued \$2 bills to be overlaid with each state's restricted printing and released from our private vault reserve to all U.S. residents who beat the 7-day deadline. For now dealers can't

■ **LIMITED RELEASE BEGINS:** To the right is the never before seen entire 50 State \$2 Bill Collection™ shown off by the World Reserve. You can't get these exclusive state \$2 bills from local banks, credit unions or even the Federal Reserve. Dealers and collectors who are lucky enough to find them are sure to be charging a hefty premium to let them go. But getting the entire 50 State \$2 Bill Collection™ may be hard, since the release is being restricted. That's why the World Reserve Monetary Exchange has also decided to release all 50 states together in one complete collection to U.S. residents who beat the deadline by calling 1-888-485-8214 in the next 7 days.



get the vault packs of the state \$2 bills to make sure residents can get what they need," Marshall said.

"These exclusive state \$2 bills will be highly sought after and are extremely popular to hand out as gifts for friends and family. They are the perfect gift for any occasion," he said.

"That's why this announcement is being so widely advertised, to make sure every U.S. resident has a chance to get their own state \$2 bill," said Marshall.

They are sure to impress because most people have never even seen one of these

newly enhanced state \$2 bills featuring their state's skyline and significant state symbol with President Thomas Jefferson on the front.

"Since these are the only existing state \$2 bills, anyone who wants more than 10 sealed vault packs of 4 bills in protective estate wallets must submit requests in writing so there will be no hoarding by dealers," said Marshall.

"You better believe we will be strictly enforcing the limits so that we can guarantee there will be at least 10 vault packs for U.S. residents who call in the next 7 days," Marshall said. ■



■ **GET THEM WHILE YOU CAN:** Shown above inside the maximum security vault of the World Reserve Monetary Exchange is their entire 50 State \$2 Bill Collection™ that only 1 out of every 1,291 households will have an opportunity to get. Also shown are the new state \$2 bills in the protective estate wallets, only released banded together in packs of 4, that everyone is trying to get for themselves and to give as gifts. They are so impressive that those lucky enough to get them may feel like they were handed a million dollars.

HOW U.S. RESIDENTS CAN GET THEIR STATE \$2 BILLS

U.S. RESIDENTS ONLY

The special Toll Free Hotlines are open to U.S. residents only. Residents have just 7 days to get their states \$2 bills beginning at 8:00am today. If you miss the deadline you'll be turned away and forced to wait for future announcements in this publication or others, if any.

The World Reserve Monetary Exchange is only releasing the never before seen state overlaid \$2 bills banded together in packs of 4, each in its own protective estate wallet, for just \$12 per wallet and shipping to U.S. residents only. There is a strict limit of 10 state \$2 bill vault packs per household. To claim yours call the special Toll Free Hotline numbers below.

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1-888-485-8216

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WHAT TO DO IF ALL LINES ARE BUSY

If you are a U.S. resident trying to get the new state \$2 bills within the 7 day deadline and have not been able to reach an operator by calling the special Toll Free Hotline or any of the five Overflow Hotline numbers, follow the steps below.

- 1) Immediately call the Toll Free Hotline number below.
- 2) You will then be connected to a special operator who will ask you for the code number below and arrange delivery of your state \$2 bills.

Call Toll Free: 1-888-509-2680 Code: NL141

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Insulation's Creation

How we've stayed warm and kept our cool through innovative use of resources BY CONNIE BASTYR

For thousands of years clothing has provided the first line of defense against chilling temperatures and blazing sun rays, but history indicates that the idea of adding thermal layers to enhance the comfort of a shelter took a long time to develop. Initially, water-repelling, wind-blocking walls — found in caves or crafted from stone, wood or animal hides — sufficed as protection from the elements. But once people discovered a safe means of generating heat indoors, the motive to retain that warmth drove a desire to insulate their dwellings.

Instinctively looking to local resources, people discovered thermal properties in a broad range of natural materials. To create blanketing layers, they harvested or repurposed substances such as sod, cotton, paper, wood shavings, sawdust and more. Tapping into an ever-ready supply of cork native to their regions, people in southern Europe and Africa have used it to insulate their homes for many centuries. Ancient Greeks and Romans initially used locally mined asbestos to protect themselves from heat and thereby discovered the mineral's insulating properties. (It was commonly used in modern structures until its health risks were established in the 1970s and '80s.) And a lack of trees led Nebraska settlers to rely on an abundant supply of straw for their shelter, so they learned about the thermal advantages of straw-bale construction.

Another form of "bio-insulation" was harnessed in 1893 by Samuel Cabot, a chemist who started out making tar-paper and later became a famous wood-stain manufacturer. In an attempt to find a use for eelgrass (an overly prolific sea plant found along the Cape Cod coast), Cabot began researching and learned that some people stashed the dried

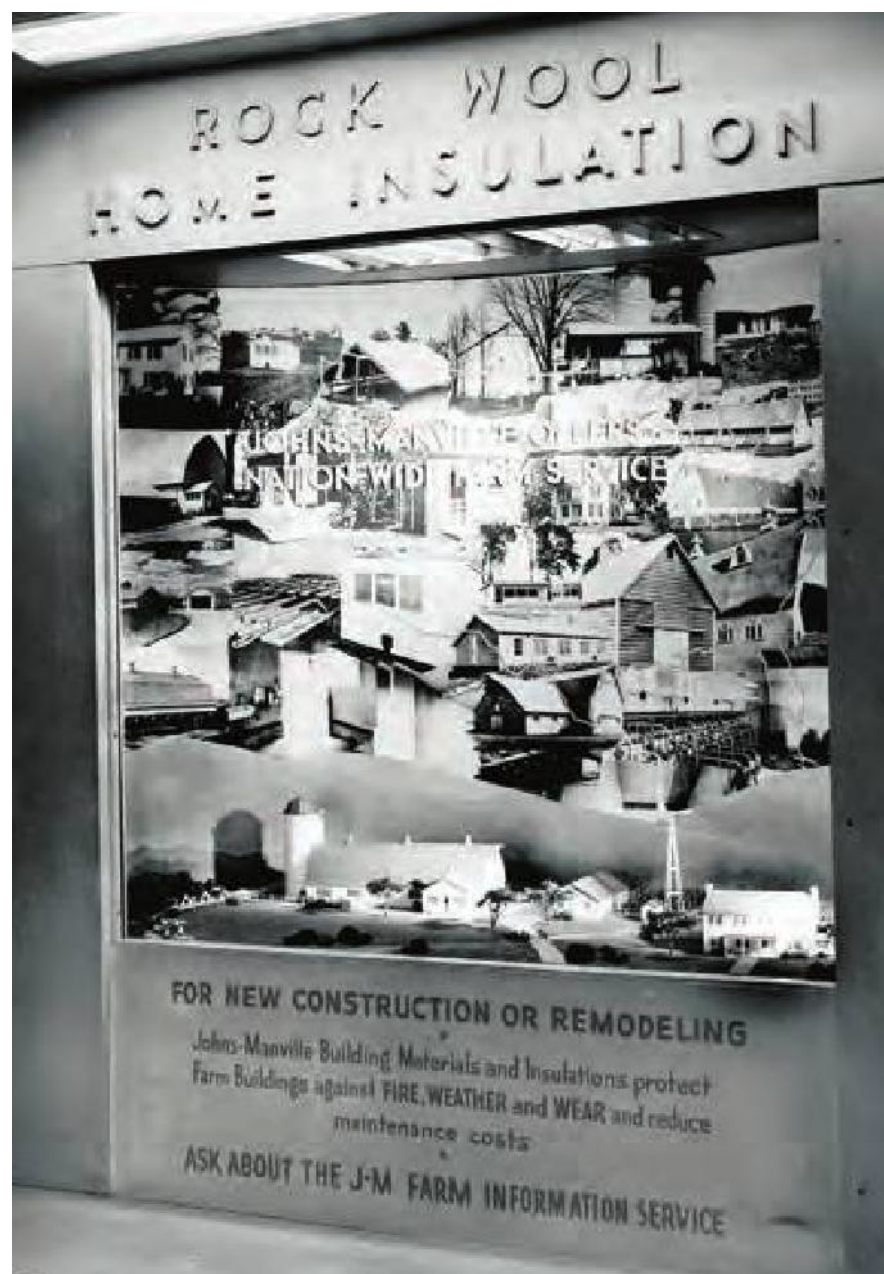
weeds in their walls for warmth. After discovering that the plants' air pockets offered thermal properties, he gathered, dried and sandwiched the grass between sheets of paper to make "Cabot's Quilt," which became one of his company's major product lines for the next 40 years.

Two other materials — rock wool and slag wool — were predominant insulators from the mid-1800s to the mid-

1900s. Made from fine strands of molten rock or industrial slag, both of these mineral wools are known for their fire resistance as well as their thermal protection.

The 20th century brought the harnessing of a variety of new insulators. Finally recognizing the insulating potential of glass fibers (originally produced by ancient Egyptians for decorative pieces), glass makers and some manufacturers of asbestos and mineral-wool insulations expanded into production of fiberglass insulation during the mid-1900s. In 1944 Dow Chemical Co. patented Styrofoam, the forerunner of today's extruded polystyrene foam, an increasingly popular insulator. And in the 1950s Thomas Jefferson's idea to incorporate cellulose into his famous Monticello estate was resurrected when paper-base wool began to be mechanically produced and widely used as insulation.

Thanks to these developments, the growing prevalence of air conditioners and the energy consciousness that began in the 1970s and resurged with the green movement, insulation has evolved from a building amenity into a construction requirement. Modern homeowners no longer have to worry about devising ways to keep out the cold or keep in the heat; the only dilemmas we face are in choosing among the vast array of insulating products and approaches currently available and constantly emerging. ♦



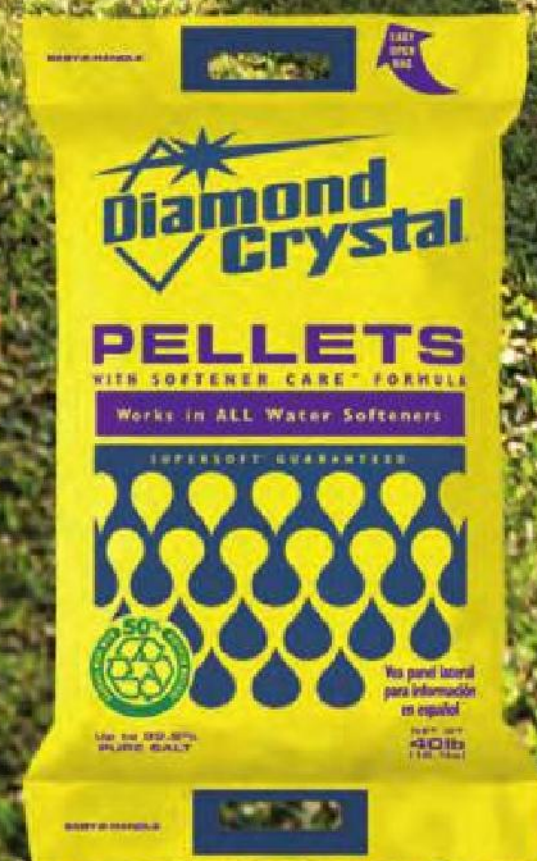
A display at the 1939 New York World's Fair featured Johns Manville rock-wool insulation as a protection for farm buildings "against fire, weather and wear."

PHOTOGRAPHY COURTESY JOHNS MANVILLE

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